

THE MAGAZINE OF

Standards



TANDARDS ARE EVERYBODY'S BUSINESS

December 1956



December, 1956

Volume 27, No. 12

In This Issue

The Seventh National Conference on Standards — Standards Are Everybody's Business

The Howard Coonley Medal	356
The Standards Medal	356
Thirty-Eighth Annual Meeting of the American Standards Association	358
Chemical Industry Standards—Management Views and Mutual Benefits	361
Dollar Savings Through Standards—Case Histories at the Company Level	362
Where Are We in Screw Thread Standardization?	364
Clarification and Interrelation of Steel Specifications	366
Company Member Conference Elects Officers	368
Standards to Prevent Death and Destruction—Everybody's Business	369
After the Standard—What Next?	371
Standardization and Atomic Energy	372
What the Medalists Said	374
Charles Rufus Harte—Obituary	375
Conference Personalities	376
News	378
American Standards. Status as of December 3	380
Standards Outlook. Leo B. Moore	383

Published monthly by the
American Standards Association, Incorporated
70 East Forty-fifth Street, New York 17, N. Y.

Officers

H. Thomas Hollowell, Jr, President
Vice Admiral G. F. Hussey, Jr, USN (Ret), Managing Director and Secretary
Cyril Ainsworth, Technical Director and Assistant Secretary

Ruth E. Mason, Editor

Sheila Dressner, Art and Production Editor

Single copy 60¢. \$7.00 per year (foreign \$8.00). Schools and libraries \$5.00 (foreign \$6.00). This publication is indexed in the Engineering Index and the Industrial Arts Index. Re-entered as second class matter Jan. 25, 1954, at the Post Office, New York, N. Y., under the Act of March 3, 1879.
Opinions expressed by authors in THE MAGAZINE OF STANDARDS are not necessarily those of the American Standards Association.

Marginal Notes

Highlights of the Seventh National Conference on Standards—

The National Fire Protection Association, the Atomic Industrial Forum, the Standards Engineers Society, and several of the divisions of ASA cooperated with the American Standards Association in presenting the Seventh National Conference on Standards at the Hotel Roosevelt, October 22-24.

Emphasis was on standards as everybody's business—not only in bringing about better everyday efficiency, greater production with less cost, and savings in time, materials, and inventory—but also in terms of responsibility.

H. Thomas Hollowell, Jr, ASA's president, urged the conferees to act on the conference theme "Standards are everybody's business." "It is everybody's business to know that standards are necessary, for one simple reason: standards help everybody," he said. "It is our business as standards men to make this message known and to help create the new standards we need for a productive, dynamic, and secure America."

Arthur S. Johnson chairman of ASA's Standards Council, stressed the same theme. He states his philosophy thus, "Codifying new knowledge will ever be a challenge to ASA. It would seem that peace is possibly assured not to 'the fustest with the mostest,' but to the smartest. Within our own American system of free enterprise, with its many voluntary controls, vast distribution philosophy, and rapidly increasing real wages, we seem to be discovering the basis of spiritual qualities, the principle of equal dignity of all men. If this be so, then our increasing wealth is lifting us to a higher spiritual plane. Toynbee has said, 'On the spiritual plane it is impossible to live except dangerously.' As the American people seek ever higher spiritual planes, and seek to control the dangers with which such ventures are fraught, the concept of control will be through voluntary organization and the drafting and use of voluntary standards. Surely standards are everybody's business."

A project started during 1956 under the procedures of the American Standards Association will draft American Standards of benefit to everybody, Mr Johnson pointed out. He referred to the project on standards for ophthalmic lenses. "Somebody may feel abused, of course," he said, "because his cheap, optically aberrant lenses will have no ready market, but everybody, at least everybody over 40, and some younger, will find this standard to his benefit."

He also referred to the American Standard Minimum Performance Requirements for Institutional Textiles, L24. These cover articles constantly purchased by hotels and institutions — hospitals, restaurants, universities, and others. Hotels alone buy more than 100 million dollars worth of textiles annually. Certain prominent distributors are already advertising in institutional publications that their merchandise meets or exceeds the requirements of American Standard L24.

In January, 1957, a hotel purchasing course will feature these new American Standards (L24) and their relation to purchasing, laundering, dry cleaning, care, and use. The seminar will be held at the Iowa Center for Continuing Education, State University of Iowa, in cooperation with the American Hotel Association.

Board of Review—

The members elected by ASA's Standards Council to act as its Board of Review on approval of American Standards were announced at ASA's annual meeting October 22. These are the men who take the final action to make the work of organizations or committees effective as American Standards. Members of

the Board of Review for 1957 and the Member Bodies who named them to the Standards Council, are:

L.W. Hill, Carolina Telephone & Telegraph Company, International Telephone Association

P.L. Houser, Metal Cutting Tool Institute

L.M. Podolsky, Sprague Electric Company, Radio-Electronics-Television Manufacturers Association

J.D. Rogers, New York, New Haven and Hartford Railroad Company, Association of American Railroads

Ernst Weber, Polytechnic Institute of Brooklyn, Institute of Radio Engineers

C.A. Willson, American Iron and Steel Institute, American Society of Civil Engineers

C.W. Franklin, Consolidated Edison Company of New York, Electric Light and Power Group

International—

Speaking of the growing interest in international work in the field of standardization, J.M. Bryant, Link Belt Company, said, "We have found that our neighbors have good ideas also, and many sound reasons why things should be done somewhat differently."

"For some time now," he explained, "our ball and roller bearing groups have been consulting with other members of the ISO Technical Committee 4 before pushing for a national standard, and it is obvious to us that this procedure enables us to accomplish better standardization, faster, at much less cost, at both the national and international levels."

It was Mr Bryant, too, who was responsible for what may be considered a recapitulation of standardization philosophy. He said: "Our Creator has clearly pictured for all of us the importance of standards. It is certainly significant that established patterns of life are necessary for our very existence. Life without them, if even possible, would certainly be confounded. Of further significance is the fact that these examples by which we live have no barriers of nationality, industry,

color, or creed—they are indubitably international. They tell us in no uncertain terms that we waste time, money, and even life when we retard or block national and international standardization. For more obvious reasons, they illustrate for us the evils of industrial standardization created without due consideration of all interested people in a specific nation.

"The slogan 'Let's make it easier for the customer to do business with us' strikes at many industry patterns where the broader aspects of a national and international standard have not been considered as industry standards are considered. It further strikes at industries who refuse to consider national standardization."

Best Wishes to T. D. Jolly—

As Thomas D. Jolly retires from the Aluminum Company of America, he takes with him the best wishes of everyone in standardization. Despite the pressure of his work as vice-president in charge of engineering and purchasing for Alcoa, he served ASA as president (1949-1951) with imagination and energy, and contributed greatly to the development of a broader knowledge of ASA's policies and methods. He also encouraged an interest in standards on the part of the National Association of Purchasing Agents, of which he had been president. He gave service to the Government, too, as a member of a special committee of the Hoover Commission to study Government purchasing, including standards.

Mr Jolly has left the Aluminum Company, after 41 years of service, to "raise the best polled Hereford in the country," he says. The Jolly Farm, in the family since 1792, boasts a herd of 200 beef cattle.

PLAN NOW FOR SAN FRANCISCO

November 13-15, 1957

Eighth National Conference
on Standards

St Francis Hotel
San Francisco, California

THE ANNUAL INDEX

to Volume 27, 1956,
will be published as Part 2 of
the January 1957 issue of

THE MAGAZINE
OF
STANDARDS

The Howard Coonley Medal for 1956 was presented to Frederick S. Blackall, Jr., "in recognition of outstanding services to the national economy through voluntary standardization." The presentation was made by H. Thomas Hallowell, Jr., president of the American Standards Association, at the awards luncheon, October 24, during the Seventh National Conference on Standards, at the Hotel Roosevelt, New York. Mr Blackall is president of the Taft-Peirce Manufacturing Company, Woonsocket, R. I.

Mr Blackall is a "striking example of a top manager with a full knowledge of standards and their application in the field of mechanical engineering and a keen appreciation of the importance of standardization to his own and other industries," said H. C. Ramsey, who presented Mr Blackall for the award. In addition to his personal services on standards committees and boards, he has been particularly generous in making available the services of his company's experts for standards projects of national scope, and he has converted suppliers and customers to the virtues of standards," he said.

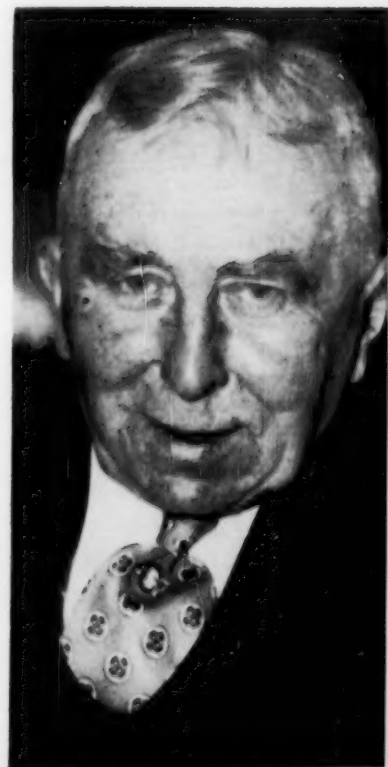
The Howard Coonley Medal was established in 1950 by the American Standards Association, with the support of industrial organizations. It has been presented to Howard Coonley, 1950; Herbert Hoover, 1951; William L. Batt, 1952; Ralph E. Flanders, 1953; Thomas D. Jolly, 1954; and Harold S. Osborne, 1955.



The Standards Medal for 1956 was presented to Charles Rufus Harte "in recognition of service in the development of voluntary standards." This service extended over a period of 40 years, and throughout the entire existence of the ASA's Electrical Standards Board, under various titles, he has been its chairman, said J. L. Walker, who presented Mr Harte for the award. "Added to his technical skill in standardization activities are the diplomatic skill and unending patience which he displayed particularly as chairman of the Rules Committee which developed the Constitution and By-Laws under which the ASA still operates," Mr Walker declared. Mr Harte had been trained as a civil engineer and spent a large part of his life in work on electrical traction.

He was construction engineer of the New York, New Haven, and Hartford Railroad Company.

The Standards Medal is awarded by the American Standards Association each year to an individual who has shown leadership in the development and application of voluntary standards. It has been presented previously to Paul G. Agnew, 1951; Frank O. Hoagland, 1952; Perry L. Houser, 1953; John Gaillard, 1954; and James G. Morrow, M.B.E., 1955. *Note:* All who knew and worked with Mr Harte have been saddened by news of his sudden death November 13, only three weeks after he received the Standards Medal.





CITATION: His record of leadership in the voluntary standards movement spans three decades, during which, with unceasing dedication, he has promoted, inspired, and actively advanced the cause of standards. A founder member, in 1926, of the American Gage Design Committee, he became author of the original text of this committee's fundamental report, published in 1930 by the National Bureau of Standards. As chairman of the 1946 U. S. mission to England which participated in the development of the ABC Unified Thread System, he made a major contribution to the establishment of international standards. In his work on the Machine Tool Advisory Committee of the National Production Authority, he has shown himself to be a staunch advocate of standardization in Federal Government operations. He has spread the message of standards and their practical application in industry and the engineering professions through his activities as president of the American Society of Mechanical Engineers and of the National Machine Tool Builders Association. He was a member, and for a time chairman, of the Board of Codes and Standards of the American Society of Mechanical Engineers, and he has served on several committees of the American Standards Association. His outstanding work for standards has reached far beyond his special field of mechanical engineering and tool manufacture. He is honored today by standards men in all fields as one of their most distinguished exponents.



CITATION: His service to the cause of standards began in the earliest years of the national standards movement in America and continued throughout forty years with unceasing devotion and growing distinction. A builder of transmission lines, constructor of power stations, electrifier of railroads, he is a pioneer proponent of cooperation among all groups concerned in the development of standards; and he sought and won that cooperation where none had existed before. Active in the work of the American Standards Association since 1923, he has served as a member of its Standards Council for twenty-five years; and he headed the committee which drafted the Constitution and Rules of Procedure for changing ASA from a limited committee to an association of broad scope. As chairman of the Electrical Standards Board since 1926, he has used his rare negotiating skill and diplomacy to achieve rich and fruitful ends. As a long-term member of the United States National Committee of the International Electrotechnical Commission, he employed those skills in international negotiations. He is a leader among those men responsible for the coordination of electrical energy through bringing together in the standards movement the four great groups of the industry: light and power, manufacturing, communications, and electronics. An elder statesman of the standards movement, he is honored by standards men wherever they may be.



Conference registrants came from all parts of the United States, Canada and Brazil.

STANDARDS ARE EVERYBODY'S BUSINESS. *Those who registered at the National Conference on Standards for 1956 heard this again and again. It was shown in discussions of standards as a management tool in the chemical industry—as decisive factors in industry's cost control—in the peaceful applications of atomic energy—in methods of saving lives and property—in clarification of steel specifications—and in screw thread standardization.*

The American Standards Association sponsored the National Conference, with the help of a number of national associations and technical societies which themselves sponsored individual sessions. One of the important features was award of the Howard Coonley Medal and the Standards Medal for 1956 by ASA (page 356).



H. Thomas Hollowell, Jr., president of the American Standards Association, gave the keynote address at the annual meeting of the Association—the first session of the Conference. Quoting Macauley ("The business of everybody is the business of nobody"), Mr Hollowell said, "Everyone agrees that standards are important, but 'everybody' does not do enough about it to give us the national standards we need in a growing Twentieth Century economy." Today, he said, the need for new standards is increasing at the same breath-taking speed as our racing industrial technology. Industry faces increasing costs all along the line—in labor, in raw materials, in machine tools, in transportation, in the hiring of money itself. Americans face tremendous Federal programs for armaments, roads, welfare, health, aid to education, and other services. The only way to prosper and grow under such terrific demands is by reducing waste in operations, increasing industrial efficiency, and raising productivity. "I know of no better way to begin than by the widespread use and development of national standards," he said.

Calling attention to a report made last year by three members of the American Society of Mechanical Engineers following a visit to Russia, he warned, "We are involved in the fiercest technological competition that has ever been waged between two nations." One particularly impressive example



Four expressions in a heartfelt appeal—Mr Hollowell calls for more national standards to meet today's needs and maintain USA's competitive position in the world. As president of Standard Pressed Steel, and ASA, Mr Hollowell is very familiar with standards work.

of standardization reported was the building of 50 standardized semiautomatic lathes per day on assembly line basis in one machine tool plant—15,000 lathes a year. All American machine tool builders combined do not manufacture more than 1,000 of such lathes per year, and those are of a great number of different designs and standards, Mr Hallowell declared.

The American Standards Association provides the most comprehensive national forum where men can meet when their standards problems become the concern of a number of national groups, he said. "What worries us most is that lethargy and personal interests prevent us from doing as much as we should like to do and as much as we know should be done to reap the full benefits that national standards can give us."

Standards on a national base are so clearly beneficial that their development and use should be looked upon as public policy, said Arthur S. Johnson, chairman of ASA's Standards Council. Mr Johnson presented a review and forecast of the Council's work at ASA's annual meeting.

This has been a very busy year, he said, referring particularly to the organization of the Nuclear Standards Board, the growing use of L22 standards for performance of rayon, acetate, and mixed fabrics, work on institutional textiles, and approval of new editions of a number of safety standards.

A suggestion that all standards approved by ASA be reviewed by legal counsel, and another suggestion that the words used in connection with "standards"—specification, code, and similar nouns—be defined are both in the hands of committees, he said.

Recommendations on the scope of the American Standards Association (see "What Is the Scope of ASA?" by J. R. Townsend, *MAGAZINE OF STANDARDS*, August, 1956) is being considered by the Standards Council.

"The insatiable appetite for more and better material things has greatly accelerated industry," Mr Johnson commented, "But the principle of management which is serving as the tool of tools is the standards principle."

Reporting on the year's work of the American Standards Association, Vice Admiral G. F. Hussey, Jr, (USN, Ret), managing director of the Association, listed 13 new projects that had been started during the past year. Increased activities are indicated in a remarkable growth in sale of American Standards, he said. He announced an increase in dues for all classes of membership to meet the increasing expenses of the Association. The Nuclear Standards Board is such a tremendous proposition that the Board of Directors has undertaken steps to obtain special financing, he said.

Fifty-three American delegates attended the meetings of the International Electrotechnical Commission at Munich, Germany, in June, Admiral Hussey reported. This is the largest American delegation ever to attend an



Avisco and Reeves tags certify that rayon and acetate fabrics meet performance requirements of American Standards L22, and arouse interest of American Home Economics Association representative Miss Lucille Williamson. Exhibit showed labeling of fabrics to assure consumers that they can buy good wearing quality.

Ellsworth Seaman watched critically during showing of conservation film his office helped make. Mr. Seaman is Bureau of Ships' Standardization and Conservation Planning Engineer.



Just returned from meetings of ISO committee on ball bearings, J. M. Bryant (standing) told how interest in work is growing. Speakers at opening session (seated, left to right) Rear Admiral L. A. Kniskern, USN; H. Thomas Hallöwell, Jr; Vice Admiral G.F. Hussey, Jr, USN (ret); A.S. Johnson.

IEC meeting outside the United States. A total of 100 American delegates attended the meetings of the Council of the International Organization for Standardization and 14 technical committees. The Board of Directors of ASA is seeking means to support such delegations with adequate secretarial help from the ASA staff or from the Member-Bodies.

Increasing interest in international standardization, evident in a 70 percent gain in attendance at recent meetings of Technical Committee 4 of the International Organization for Standardization, was reported by J. M. Bryant, chief engineer of the Ball and Roller Bearing Plant, Link Belt Company, Indianapolis, Indiana. Mr Bryant was chief USA delegate at the committee's meeting at Vienna, Austria, in September. Important result of the meeting was unanimous acceptance by delegates of national standards bodies of 15 nations of an identification code for bearings. The code is an

alphabetical-numerical system to code all bearings that have been or will be standardized in the future on an international basis. It follows closely the system used by the Anti-Friction Bearing Manufacturers Association, now being considered by Sectional Committee B54.

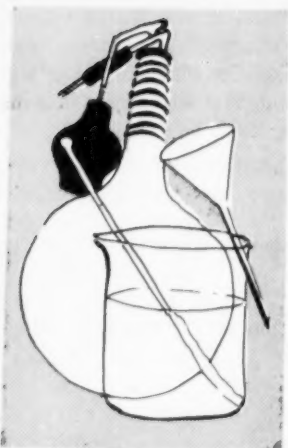
Great quantities of everyday materials, and lesser quantities of many special materials, are needed in the technological revolution now taking place, said Rear Admiral L. A. Kniskern, USN, Commander of the New York Naval Shipyard. The Bureau of Ships is in the forefront, with high performance submarines, guided missile ships, nuclear propulsion for surface ships, and other "miracles almost too spectacular to believe." America is no longer self-sufficient in raw materials, Admiral Kniskern said, and conservation is essential. He introduced the new film "Conservation Planning for National Security," produced by the Bureau of Ships and shown for the first time at the Conference.

H. Thomas Hallowell, Jr, president of the Standard Pressed Steel Company, was re-elected president of the American Standards Association for 1957, with **Van H. Leichliter**, vice-president — Operations, (now president) American Steel & Wire Division, U. S. Steel Corporation, was re-elected vice-president. **A. S. Johnson**, vice-president, American Mutual Liability Insurance Company, was re-elected chairman, and **T. E. Veltfort**, manager, Copper & Brass Research Association, was re-elected vice-chairman of ASA's Standards Council for the coming year.

ASA's Board of Directors met during the Conference (left to right) A. S. Johnson, chairman, Standards Council; Axel Jensen, Society of Motion Picture and Television Engineers; C. G. Young, American Gas Association; R. M. Gates, American Society of Mechanical Engineers; D. Roy Shoults, Aircraft Industries Association; R. E. Wilkin, Synthetic Organic Chem-

ical Manufacturers Association; H. Thomas Hallowell, Jr, President; G. F. Hussey, Jr., Managing Director; Miss C. Pascale; Cyril Ainsworth, Technical Director; Vice Admiral W. A. Kitts, 3rd, USN (Ret), Atomic Industrial Forum; H. E. Chesebrough, Automobile Manufacturers Association; Colonel Willard T. Chevalier, McGraw-Hill Publishing Company, Member-at-Large.





IMPORTANT CHANGES IN CHEMICAL INDUSTRY STANDARDS ACTIVITIES

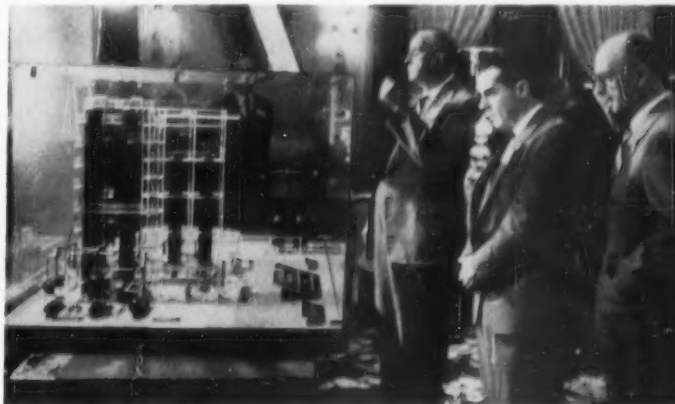
were foreseen by J. G. Henderson, chairman of the Chemical Industry Advisory Board, which sponsored a session on management's views, on behalf of the chemical industry. The advisory work of the Board on standardization of products used by the chemical industry has resulted in such major accomplishments as general acceptance of Schedule 5S dimensioning system for stainless steel and other alloy pipe, organization of a section on chemical process piping in the American Standard Code for Pressure Piping, and organization of

ASA's Sectional Committee B73 on Centrifugal Pumps for Chemical Industry Use, Mr Henderson pointed out. Now, a Mechanical Technical Committee, a project originating body, has been organized by the Manufacturing Chemists' Association. Also, standards for chemical products are being referred to ASA by the American Society for Testing Materials and other organizations. The Board has recommended that it now be reorganized as a standards board and be given responsibility for supervising standards for chemical products as well as advising on standards for products the chemical industry uses.

Mr Henderson is head of standards, specifications, and inspection services, Carbide and Carbon Chemicals Company, South Charleston, West Virginia.

"The chemical industry can receive the benefits of processing with standardized equipment only if a majority of the users specify and use such equipment," said W. D. Staley, vice-president in charge of sales for the Duriron Company, Inc, Dayton, Ohio. Illustrating his point, he mentioned experience in connection with his company's current standard chemical pump: "Even though we have made a vigorous effort to arrive at a standard chemical pump acceptable to a majority of

Some 775 standards were used in construction of this typical chemical processing unit, says the Union Carbide and Carbon Corporation. This scale model, shown below in the chemical industry's exhibit, was built by Carbide's Engineering Department for use in early process engineering and lay-out planning periods before construction of the plant. Later it helped in preparing detailed design drawings, and as a three-dimensional reference during construction. Later, it also was used in allocating job responsibilities and planning safe and efficient operation. Standards used in construction of this plant were: American Standards 200; ASTM (many approved as American Standard) 200; other nationally recognized standards, codes, specifications 50; company standards, general 150; company valve standards 125; company standard specifications 50—total standards used 775.



users, records show that a high percentage of pumps which we are shipping have some feature or accessory which does not comply with our company standard."

Management's views on standards in the chemical industry and possible benefits from greater use of standards were discussed at Session 2. J. G. Henderson (standing) served as moderator.

Panel speakers, seated left to right, are: W. D. Staley, Duriron Company, Dayton, Ohio; David E. Pierce, Diamond Alkali Company; W. M. Cooper, Monsanto Chemical Company.



The chemical industry has equipment requirements which cannot be satisfied with designs developed for other industries, Mr Staley declared. "These requirements are of such magnitude as to warrant special consideration by manufacturers in developing equipment to meet the specific needs of this rapidly growing segment of our economy."

David E. Pierce, director of manufacturing control, Diamond Alkali Company, Cleveland, Ohio, emphasized the need for cooperation. "Only by cooperation can new standards be developed and older standards brought up to date," he said. His company has saved \$5,000 a year through the purchase of oil and greases to standard specifications, he said. "With all companies working together to extend national standards for the mutual benefit, there will be very real economic gains for the country as a whole."

He also mentioned the need for standard dimensions and connections. "Spare parts, if interchangeable, could be greatly reduced in number with resultant savings in space and in inventory charges," he declared. "Standard foundations would make it possible to replace a pump in an emergency, knowing that the heights, bolt centers, and shimming methods would be the same."

The Monsanto Chemical Company's standardization program is still very young (it has been under way for two years), said W. M. Cooper, assistant general manager, Research and Engineering Division, Monsanto Chemical Company, St Louis, Mo. "But," he said, "we have saved about \$150,000 in the past year. Through standardization, we hope within five years to be able to report a five to ten percent increase in the net company earnings after taxes due entirely to standards."

DOLLAR SAVINGS THROUGH COMPANY USE OF STANDARDS were described at the session sponsored by the Standards Engineers Society. H. G. Arlt, Bell Telephone Laboratories, vice-president of SES, presided.

A company specification numbering system that eliminates government, military, or commercial specification numbers from the face of drawings will bring savings of more than \$16,000 for the first full year in which the system is in effect. This is the estimate of William F. Kummer, standards coordinator, Fairchild Camera and Instrument Corporation, Syosset, Long Island. The system, which cost \$2,000 to originate, consists of some 300 specification numbers based on approximately 100 government, military, and commercial specifications and their various types, classes, and conditions. "As new requirements arise," Mr Kummer said, "company specification numbers will be assigned within the basic system structure. Almost infinite expansion is possible without changing the basic system."

Simplified drafting methods have resulted in time savings ranging between 35 and 55 percent, and dollar economies would have amounted to \$720,000 in 1955 if the simplified practices could have been used on all the company's work, said Jay H. Bergen, standards administrator, American Machine & Foundry Company, Greenwich, Connecticut. At present, the simplified practices cannot be used on defense work.



At the dollar savings session—Jay H. Bergen; H. G. Arlt; W. Kummer, speaking; R. G. Munroe

Your smallest investment— ASA membership — was theme of ASA's exhibit. Membership costs you 1.5 cents per \$1,000 sales—gives you nationally coordinated American Standards and international recommendations. Payoff on both—Dollar Savings.

To stay abreast of progress of American industry, a company must continuously add to its competitive position, said R. G. Munroe, Engineering Standards Section Manager, Raytheon Manufacturing Company, Wayland Laboratory, Wayland, Massachusetts. Our company enhances its competitive position in a variety of ways through the use of standards, he said.

Threaded assembly hardware and the company's line of standard control knobs were the cases used as examples by Mr Munroe.

Through the standards program, 24,000 varieties of assembly hardware were reduced to 315 items, saving the company a quarter of a million dollars a year, he said. In addition, a manufacturing specification for general-purpose assembly hardware led to many savings in time and to greater efficiency by the design engineer, the drafting department, and in production.

In the case of control knobs, special knobs had to be designed to meet the functional requirements of the Government agencies, since the majority of knobs commercially available had been designed for the radio industry. Temporary tooling worth \$45,000 had been built to produce these special designs. This was a personnel problem as well as a production problem, since designers made their designs a medium of personal expression. Through consultation and education, objections were overcome, and a family of standard knobs was laid out. Estimates showed the proposed standard line would reduce knob costs by 50 percent. Eighteen months later, analysis showed \$83,000 saved due to lower piece prices and elimination of special designs and tooling. Sales to industry netted an additional \$35,000 profit; result, a total gain of \$118,000. In addition, sale of the standard control knobs has been increasing.

His company's experience has been that gains from a few recent standards projects are sufficient to underwrite the costs of the standards program. Mr Munroe declared.



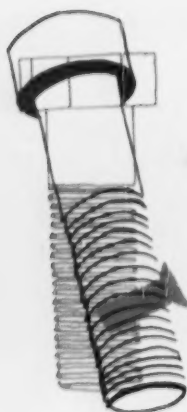
Jay Bergen answers questions put to him after the meeting by Lowell Foster, Minneapolis-Honeywell; Kenneth L. Heim, Cutler-Hammer; E.F. Hazen, T. Bellen, J.H. Kilgour, IBM.

C. W. Stockwell and Frank A. Kocian of International Harvester, exchange views on the ideas heard at the meeting.



Shown on exhibit panel were examples of a few of the more than 1600 American Standards in a wide variety of fields. Quotes from companies gave specific examples of dollar savings. Use of L22 standards is shown on exhibit panel in background.





COMPANY MEMBERS of the American Standards Association exchange ideas on standards in the Company Member Conference. At the annual meeting of the CMC, held October 23, J. Robert Walgren, standards engineer, Aluminum Company of America, Pittsburgh, Pennsylvania, and chairman of CMC, presided. Screw threads and steel specifications were the problems under discussion.

Plenty of opportunity was given for discussion and for questions from the floor since previous experience had shown that members find this exchange of views most interesting and rewarding.

Frank P. Tisch, Aviation Division, Pheoll Manufacturing Company, Chicago, opened the discussion on why screw threads must be everybody's business. Mr Tisch is chairman of ASA Sectional Committee B1 on Standardization and Unification of Screw Threads, and also chairman of Subcommittee 3 of ASA Sectional Committee B18, Slotted and Recessed Head Screws.

A problem of many years standing has been recognized and solved in a revision of American Standard B1.1-1949, now near completion, he said. More than 60 members, as well as special interest groups, have been working for over 18 months on the revision. The problem is in reference to the statement contained in previous editions, "Pitch diameter tolerances are cumu-



lative and include all errors of lead and angle." Some of the systems of "not go" gaging enforce this principle to a greater degree than others, Mr Tisch explained. The committee has recognized that tolerances, as enforced, deviate considerably from the cumulative, and that the minimum-metal pitch diameter limit is a virtual diameter rather than an actual diameter. This is now provided for in the new standard, which designates the minimum pitch diameter limits of classes 1A and 2A as virtual diameter limits. A safeguard is provided, which may be enforced when necessary, that the diameter equivalent in any given element shall not exceed one-half of the pitch diameter tolerance.

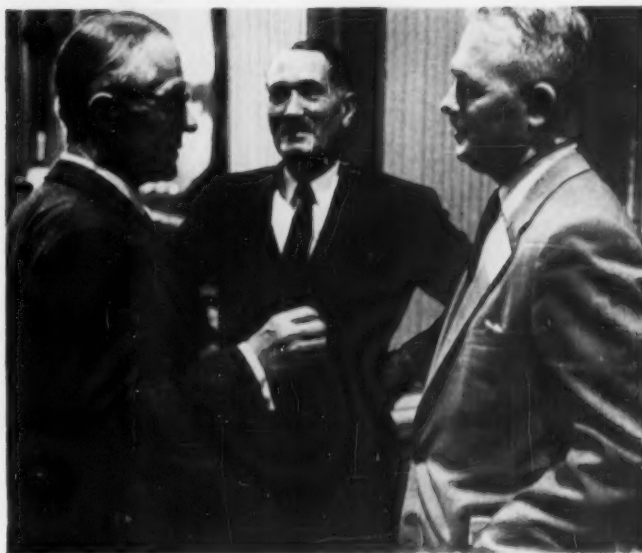
Principal additions in the revised edition will be class 3A/3B limits for the extra-fine, 8-, #12-, and 16-thread series, and inclusion of tolerances in the step tables for special threads of 44 and 27 threads per inch. Those for seven threads per inch have been

Discussion on screw threads—Panel, left to right, Harvey F. Phipard; Frank P. Tisch; Irvin H. Fullmer (speaking); Charles Wright; J. Robert Walgren; Henry Lamb, ASA. CMC secretary.

Left, below—Irvin V. Fullmer and Charles M. Wright in an informal discussion after meeting.

Right—Visitors from Canada: At right, F.A. Sweet, General Manager, Canadian Standards Association, with A.F. Telfer, CSA Public Relations Manager, center, and G.G. Sommaripa, ASA staff.

Below—Roy Trowbrige, General Motors Corporation, told the meeting that a note on drawings should specify whether "not go" gaging is to be "virtual gaging" or "element gaging" when 3A quality screw threads are desired.



dropped. Principal changes relate to the minor diameter of the internal thread where the tolerance has been increased to facilitate tapping for all sizes $\frac{1}{4}$ inch and larger, 80 to 4 threads per inch. This has been done without sacrificing strength of the fastening in normal lengths of engagement, Mr Tisch said.

As Mr Tisch pointed out, "All American Standards are voluntary and the user may deviate from them as he sees fit." "If the user chooses to follow the new thread standards he will get what has always been regarded as a commercially acceptable product, and also a product which is more specifically defined than ever before. If, on the other hand, the standard product is regarded as not meeting a given set of requirements, it is always possible to specify the thread in further detail in procurement documents."

There can be no question that for class 3B threads greater certainty of measurement is needed than that provided by "not go" thread plug gaging, said Irvin H. Fullmer, chief engineer, Metrology Section, National Bureau of Standards, and secretary of the Interdepartmental Screw Thread Commission. "This is true," he said, "particularly in connection with modern extremely high-strength bolt materials which make the nut rather than the bolt the critical element in design." He recommended that standardization committees modify paragraph 24 of American Standard B1.1 and corresponding paragraphs in the Interdepartmental Screw Thread Committee's Handbook H28 before new editions are issued. He recognized, however, that it is no easy problem to formulate a suitable statement. He discussed in detail the problem of gaging screw threads.



How can companies solve problems arising in the use of standards for slotted and tapping screws? This panel, with Harvey Phipard as moderator, answered questions from the audience. Left to right—Harvey Erdman; Louis Oest; W. M. Hanneman

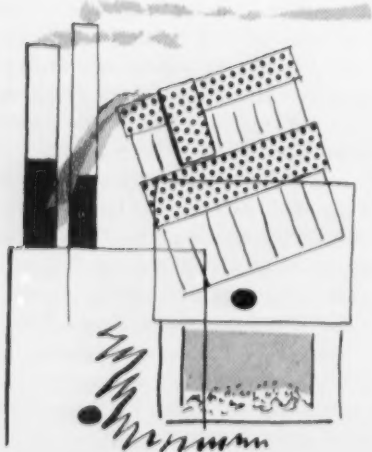
SLOTTED AND TAPPING SCREWS AND METALLIC DRIVE SCREWS were the subject of a panel discussion, also sponsored by the Company Member Conference, with Harvey F. Phipard, Continental Screw Company, as moderator. Members of the panel were Harvey Erdman, National Screw and Manufacturing Company; W. M. Hanneman, Illinois Tool Works; Louis P. Oest, General American Transportation Corporation; and Frank P. Tisch, Pheoll Manufacturing Company.

A new standard for slotted and recessed head tapping screws as well as metallic drive screws is near completion, said Mr Phipard. Tapping screws have grown in importance and variety to such an extent that this pre-

sentation of tapping screw standards in a publication of their own is one of the most important improvements in screw standards in recent years, he said. Inclusion of metallic drive screws in the new standard marks their first recognition in an American Standard. This should result in their increased use, he declared.

Questions from the floor were answered by panel members. In answer to a question on finishes for self-tapping screws, Mr Hanneman explained that cadmium plating serves as a lubricant and helps the driving qualities although it does have some limitations.

There was also discussion on identification of the iridite treatment on screws, protrusion gaging of flat head screws, and the use of Type A gimlet screws.



WHY DO WE HAVE SO MANY SPECIFICATIONS FOR STEEL?

This is a question often asked by members of the Company Member Conference. Interest in the question prompted CMC to organize a panel at its annual meeting to discuss clarification and interrelation of steel specifications. N. L. Mochel, manager, metallurgical engineering, Westinghouse Electric Corporation, Philadelphia, Pennsylvania, was moderator. Speakers were W. R. Miller, chief metallurgical engineer, American Steel & Wire Division of U. S. Steel Corporation, Cleveland, Ohio; D. H. Ruhnke, chief metallurgist, Republic Steel Corporation, Massillon, Ohio; and Joseph Gurski, assistant manager, Manufacturing Research Department, Ford Motor Company, Dearborn, Michigan.

Procurement problems from the user's standpoint were discussed by Mr Mochel. He analyzed the problems of three different purchasers—one who procures materials in tremendous quantities; one who buys in large

amounts but less than the first; and the third who buys in still lesser quantities. All three have the problem of procuring very small quantities of many materials, every day, as though purchasing for a small concern. All have difficulty in procuring so-called "standard" steels, and all gave Mr Mochel many comments on problems with quality standards, standards considered favorable to steel producers, and difficulties encountered in procuring small quantities of steel.

"One very important comment," said Mr Mochel, "was that industry must be on its feet when new and important requirements confront us, such as materials for nuclear developments. Industry must not be so tied to existing standards and specifications that it cannot or will not move quickly to meet the new demands."

The steel industry is interested in reducing the number of grades required but can only do what its customers want it to do, said Mr Miller. "Steel consumers require a variety of steel to meet their needs," he said. "Yet the grades of steel produced should not vary so as to create inventory and other problems."

Most of the orders for carbon and alloy steel bars and billets today are for less than heat lots, Mr Ruhnke pointed out. There may be ten or fifteen orders involving several specifications against one open hearth or electric furnace heat. This is a burden on the steel producer and can often be a factor in delayed shipments, he said; although the trend toward ordering to hardenability limits with some relaxation in analysis has given considerable relief.

The "H-Steels" (developed by the American Iron and Steel Institute and the Society of Automotive Engineers who worked together to formulate hardenability bands for alloy steels) have been a major step in standardiza-



Joseph Gurski (right) considers his answer to a question by Cass Karpen, Heald Machine Co, after the steel session.

tion, Mr Ruhnke declared. However, there is still need for wider use of this principle when specifying alloy steels, since many users are not taking full advantage of it.

Now, the possibility of H-Bands for carbon steels is being considered. MIL specifications, which may be used by more than one branch of the military services, have aided in supplying steel to Government specifications, Mr. Ruhnke pointed out. Chemical ranges have been made standard, check limits are listed, and hardenability limits in accordance with H-Bands have been added. SAE Aeronautical Materials Specifications have also helped to expedite delivery of steel, he said. "A better understanding of the service required of the finished part, along with improved design, manufacturing practices, and heat treating equipment have assisted in standardization," he pointed out.

The panel that discussed steel specifications (left to right) Joseph Gurski; W. R. Miller; N. L. Mochel; D. H. Ruhnke; and J. Robert Walgren



Cost reduction can be effected by controlling specification of metallurgical requirements, said Mr Gurski. If one over-specifies, he pointed out, then one pays for properties that yield no benefit as far as the end product is concerned. The Ford Motor Company has experienced this, for example, in specifying material for piston pins. The specification for piston pins was revised from tubing to bar stock. After reviewing the part processing, the quality requirement was removed, magnetic testing was specified, size increased 0.010 inch, and a calculated risk was taken that surface imperfections would

be machined off. The result was a saving of \$50,400 annually.

Adoption of American Standard Preferred Thicknesses for Thin Flat Metals, recommending decimal dimensions, has benefitted many activities of the company, he said. A former specification of "20 MS gage (0.0359)" has been changed to "0.036 inch thick" in accordance with the American Standard. Use of the preferred sizes reduced the company's number of ordering sizes by permitting the grouping of "like" thicknesses. Result is a yearly saving of more than \$327,000.



The Company Member Conference Administrative Committee held its annual meeting at the Town and Country Restaurant. Present, left to right, Forest Bump; J.M. Goldsmith; Alfred

Gastler; J.R. Welshman; Henry Lamb; J.R. Walgren; Paul Haar; Roy A. Trowbridge; M.C. Olsen; W.C. Cadwell; A.E. Heyson; Ralph McKay; C.J. Lawson. Officers were elected.

NEW MEMBERS OF THE CMC ADMINISTRATIVE COMMITTEE.

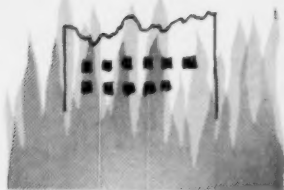
Six new members of the CMC Administrative Committee were elected at the business meeting of the Conference October 23. They are: J. M. Goldsmith, Armco Steel Corporation, Kansas City, Missouri; C. J. Lawson, International Business Machines Corporation, New York, N.Y.; Forest H. Bump, Norton Company, Worcester, Massachusetts; D. F. Engstrom, Cutler-Hammer, Inc, Milwaukee, Wisconsin; Allen E. Heyson, General Electric Company, Plainville, Connecticut; R. V. Vittucci, Bureau of Ships, Navy Department, Washington, D.C.



New CMC Administrative Committee members at the Conference—F.H. Bump, Norton Company; J.M. Goldsmith, Armco Steel Corporation; and C.J. Lawson, IBM.



CMC Officers for 1957—W.C. Cadwell, Caterpillar Tractor, Peoria, Ill., chairman; James R. Welshman, Grinnell Corporation, Providence, R.I., vice-chairman.



STANDARDS THAT PREVENT DEATH AND DESTRUCTION were discussed at a session sponsored by the National Fire Protection Association, with Percy Bugbee, General Manager of the Association, presiding.

Some 1100 experts from all parts of the United States and Canada serve on the 102 technical committees of the National Fire Protection Association, Mr. Bugbee said. Aim of all NFPA committees is to specify measures that will provide reasonable fire safety without prohibitive expense, interference with industrial processes and methods, or undue inconvenience. "Because of the competence of the persons serving on committees and the machinery provided to guarantee widespread opportunity for all concerned to be heard, the standards have come to have great influence as many of them are adopted in state and municipal legislation and as fire insurance requirements," Mr. Bugbee said. Whenever such standards have been challenged, the courts have uniformly upheld them on the basis that the standards were properly prepared by competent people and that every safeguard was provided for the fair and impartial development of the standard, he said.

Among outstanding examples of the Association's work are the National Electrical Code, most widely adopted standard in the world today, standards for storage and handling of gasoline and oil, prevention of dust explosions, installation of fire protection equipment, test methods and standards to prevent hazards from flammable clothing, for hospital operating rooms, and for safeguarding life and property from fires in which radiation or other effects of nuclear energy may be a factor.

Automatic sprinklers are the first line of defense against fire, and standards play an important part in their installation, declared T. Seddon Duke, president of the Star Sprinkler Corporation, Philadelphia. Automatic sprinkler systems have a record of 96.2 percent satisfactory performance over a period of more than 60 years, he said. As an example of their effectiveness, he compared the experience of two hospitals. Both hospitals had a fire on the same day, and both fires were believed to have started in the laundry chute. One hospital at Effingham, Illinois, had no sprinkler system. Seventy-four lives were lost. The other fire, at Philadelphia, was extinguished by one automatic sprinkler.



Henry G. Thomas, Chief, Hartford Fire Department, urged fire protection outside the metropolitan areas. Other panel members seated, left to right, T. Seddon Duke, Percy Bugbee, George H. Tryon, and Robert S. Moulton.



Interested executives in an informal huddle—M. B. Brightman, American Mutual Liability Insurance Company; Arthur L. Brown, Engineering Division, Associated Factory Mutual Fire Insurance Companies; and Percy Bugbee, NFPA.

John A. Neale, president, National Fire Protection Association, (left) with T. Seddon Duke, and G. F. Hussey, Jr.



The first fire made big headlines because of the loss of life; the other was relegated to the back page of the newspaper. Even though a hospital, nursing home, or similar institution, has all the necessary exits, Mr Duke said, few of the inmates (infants, infirm, and aged) are able to use them. Economic statistics show that 43 percent of concerns suffering severe fires are not able to resume operation, Mr Duke declared. Fourteen percent suffered a severe reduction, from 30 to 66 percent, in their credit ratings, and 26 percent, while unaffected as to their credit rating, nevertheless suffered severe loss in their orders. Also, the cost of insurance coverage, when accompanied by a system of automatic sprinklers, can be kept to a minimum.

The Building Exits Code, developed by the National Fire Protection Association in successive editions dating from 1913, is concerned only with the safety of the occupants of a building, said Robert S. Moulton, technical secretary, National Fire Protection Association. According to the general rule established in the Code, exits should be sufficient to permit evacuation of the occupants in any given space within approximately two minutes, with variations for different degrees of hazard severity. The Code takes into consideration the degree of fire hazard of the building and its contents, as well as different classes of interior finish of buildings, and it specifies limits of combustibility. The work of the committee on the Building Exits Code represents a broad cross section of the best engineering judgment on how to construct and maintain buildings in the interest of fire safety, Mr Moulton said.

More adequate fire protection of this nation's metropolitan areas—beyond the confines of municipal limits—was urged by Henry G. Thomas, chief of the Hartford, Connecticut, Fire Department. He called attention to the trend toward suburban living and the fact that these areas are protected for the most part by volunteers.

"General fire department responsibilities are to enforce laws as well as implement and put into operation standards of safe practices as prepared by the NFPA," he said. Describing the solution to the fire hazard as "preventive medicine," he said that fire fighting's most vital function is "fighting fire before it starts."

"The fire apparatus committee, representing the NFPA, National Board of Fire Underwriters, and the International Association of Fire Chiefs, is continually

working to maintain a high standard of specifications for the procurement of fire apparatus that will assure good equipment at a fair price through competitive bidding," he said. A completely revised set of standards for procurement of motor apparatus is planned for presentation by the NFPA next spring.

"The National Board of Fire Underwriters does not dictate the type of department or fire protection any city must have," he explained. "It sets the standards as to the size of the department, number of companies as well as number of men and the type and quality of equipment, merely as a guide."

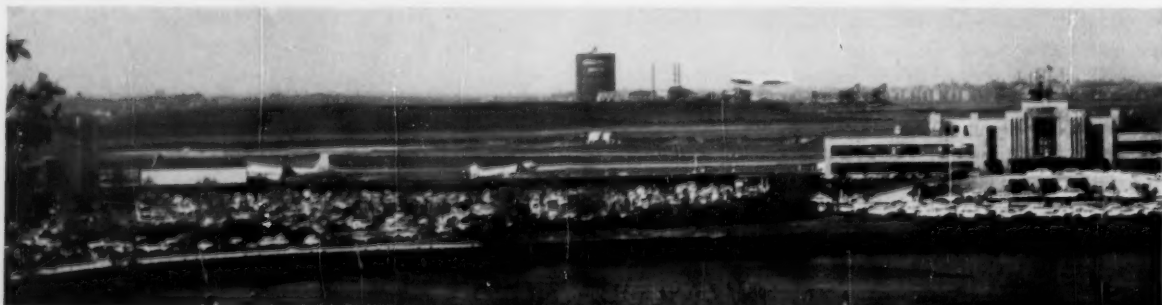
The lives of airplane passengers and crew may depend on the efficiency of fire fighting units at the airport, said George H. Tryon, technical secretary, National Fire Protection Association. At present, lack of standards and divided responsibility, even at several of the principal airports, adds to the danger of fire if a plane should crash at an airport, he said.

Following an airplane crash at the Singapore airport that took the lives of 31 passengers and two crew members, Justice Clifford Knight of the Supreme Court, Singapore, criticized airline operators for exposing thousands of fare-paying passengers to a considerable risk in the event of an aircraft fire. They either did not know or did not care about conditions in the fire service at the Kallang Airport, he said.

This accident took place in 1954, seven years after NFPA drafted its first recommendations on aircraft rescue and fire-fighting equipment for airports. Despite efforts to secure cooperation from all the groups concerned, standards of aircraft rescue and fire-fighting equipment have not been established even at the principal international airports, Mr Tryon said.

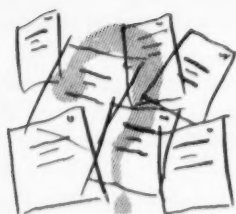
However, since the Singapore disaster, international efforts are being made through the International Civil Aviation Organization to set up standards. The NFPA standards have been circulated and comments on them are being collected, as a basis for agreement by the 16 nations that have appointed representatives to the panel.

Many problems must be solved, Mr. Tryon said, including what variations to permit between large airports with thousands of aircraft movements a month and small airports with less than 100 a month; how to provide effective fire-fighting personnel and realistic and effective training; and what group should take responsibility for furnishing the fire-fighting service at airports.





Sell standards—get them into use, urge these panelists. Left to right, F. R. Fetherston; Chester S. Stackpole; G. H. Reppert; John L. Menon (speaker) for H. W. Heinrich.



HOW OBSTACLES OFTEN ENCOUNTERED IN PUTTING STAND- ARDS INTO EFFECT

are overcome by national associations, was the theme of the session "After the Standard, What Next?" F.

R. Fetherston, chairman of the Conference of Executives of Organization Members of ASA, which sponsored the session, presided. Mr Fetherston is secretary-treasurer of the Compressed Gas Association, Inc, New York.

As code engineer for the National Elevator Manufacturing Industry, Inc, G. H. Reppert has given full time to development of elevator safety standards and to securing their adoption by cities, towns, and states. Much of his work has been with the American Standard Safety Code for Elevators, Dumbwaiters and Escalators, A17.1, the most recent edition of which was approved by ASA in 1955. The earlier edition of the standard was adopted by 25 states and 60 cities. Twenty-six cities and states have adoption of the 1955 edition under way, he said.

"The broad representation, both geographically and otherwise, on the A17 sectional committee is a great advantage in securing adoption of the code," Mr Reppert said. "When a city or state has confidence that the code represents the best judgment of a large group of experts from various interested groups they are more than willing to adopt it either by reference or by reprinting it in its entirety, because they feel it represents the best safety practice and because of the amount

of time and work it saves them," he said. City building commissioners, state labor commissioners, and elevator inspectors working under them are safety-minded and welcome safety codes and standards which they know have been developed under the auspices of the American Standards Association.

More than 50,000 basic models of gas appliances and accessories have been examined for compliance with American Standards, reported Chester S. Stackpole, managing director of the American Gas Association.

"Some 400 members of the gas industry are voluntarily contributing their time and experience to standards work," he said. "They develop new standards or review and revise current standards in the light of advancing technology. These standards provide a yardstick by which to measure the acceptability of gas ap-

Even panelists got into the discussion. G. H. Reppert argues a point with Chester S. Stackpole (at the podium).



pliances from the standpoint of safety and performance.

"Today, it is estimated that over 95 percent of all gas appliances available on the market have been tested by American Gas Association laboratories and display the registered 'Blue Star' approval seal," he said.

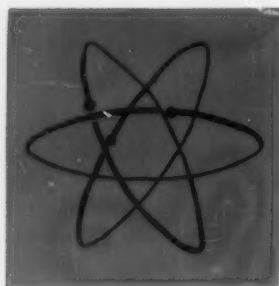
"The American Standards prepared under the ASA Project Z21 are the foundation of the gas industry's voluntary program of self-regulation in the interest of the gas appliance user."

"Standards are only effective as they are accepted and applied," declared H. W. Heinrich, chairman of the Uniform Boiler and Pressure Vessel Laws Society, Inc., New York. Mr Heinrich's paper was presented by John Menson, ASME Boiler and Pressure Vessel Code Committee. "We should be more outspoken," he said. "We

need even to advertise our wares and to sell them. Standardization and uniformity could well be worthy a crusade."

He described how the Society of which he is chairman goes about promoting the use of the Uniform Boiler Code, particularly in state and local legislation and regulations. Years of work are sometimes required before action finally culminates in a good law; then the job is to keep it from being sabotaged by improper rules and regulations, he explained.

The same can be said of all American Standards, Mr Heinrich declared. He recommended that all concerned with American Standards "promote the recognition, adoption, and application of the standard, sell it, advertise it, explain and defend it, describe its benefits and do these things with conviction, resourcefulness, and resolution."



"UNLESS NATIONAL STANDARDS FOR ATOMIC POWER ARE ESTABLISHED, we shall find ourselves faced with an infinite variety of standards which will drive a reactor designer or manufacturer crazy if he tries to build in different localities.

"Unless national codes are set up, states and municipalities will start setting up their own laws, and confusion will result worse than the divorce laws in the 48 states."

This warning was sounded by Morehead Patterson, chairman and president, American Machine and Foundry Co, speaking at the session on Standardization and Atomic Energy, sponsored by the Atomic Industrial Forum.

Mr Patterson is chairman of the Nuclear Standards

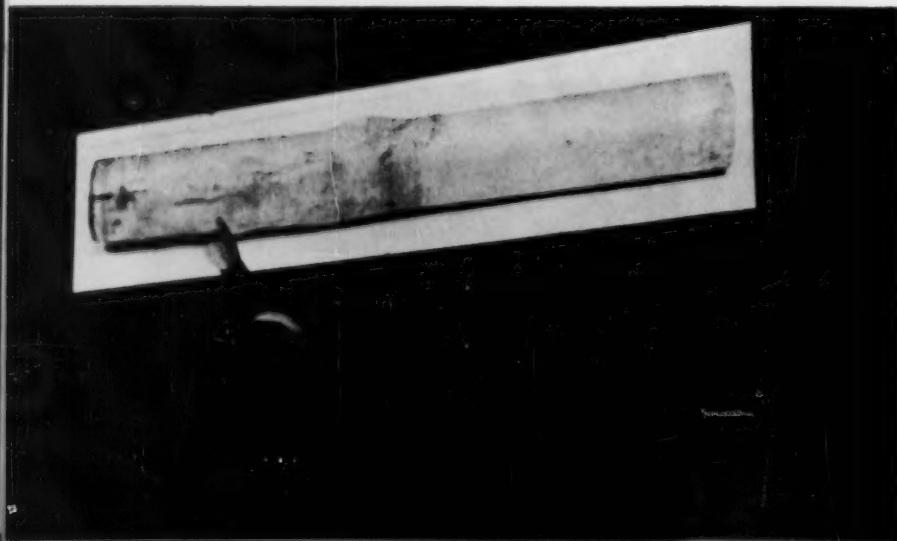
Board of the American Standards Association, which has embarked on a national program for developing standards for nuclear instruments, electrical requirements for reactors, chemical engineering in the nuclear field, reactor hazards, radiation protection, and administration.

He said: "We need nuclear standardization because it is such a dangerous field that we cannot afford to be without it. Protection against irradiation and safeguards against reactor hazards are vital."

"Many industrial states have enabling legislation for adoption of standards but no uniform standards to adopt," he added.

In outlining the work of the Nuclear Standards Board, Mr Patterson said, "We have established a sound working framework and formulated policies by which actual work by appropriate standards-creating agencies can begin."

He emphasized the need for standards to cover procedures of waste disposal, specifications for components and fuels, and in the field of nuclear chemistry, metal-



lurgy, metallography, and fabrication of processed fuels.

"The effect of radiation on electrical equipment and electronic devices," he said, "is a huge field by itself, aside from what happens to other materials exposed to new conditions."

Vice Admiral W. A. Kitts, 3rd, USN (ret), manager of Atomic Products Study, General Electric Company, and chairman of the Atomic Industrial Forum's Committee on Standards, opened the session. He said: "We are faced with a real opportunity we must seize—to apply traditional and time-honored and successful standardization procedures to this new field of science, which crosses all other fields but which is completely encompassed by none of them."

Harvey A. Wagner, mechanical engineer, The Detroit Edison Company, called for standards work to be done now "before a multiplicity of individual standards and specification procedures results in chaos in the industry."

He stressed the need for "absolute leak tightness of systems and components" in the nuclear field.

Mass spectrometer leak tests, he said, are now being specified to determine leak tightness of complete vessels as well as welded joints, despite the fact that no accepted standard specifications for leak testing by mass spectrographic methods now exist.

Dr Stuart McLain, program coordinator, Argonne National Laboratory, Chicago, Illinois, also stressed the importance of leak tightness, pointing out that the definition of leak tightness in a ventilating system which would be given by an architect-engineer differs widely from the definition that would be given by an engineer in charge of design of a facility for manufacture of fuel elements containing plutonium.

Dr McLain stated that few codes or procedures have been drawn up and accepted by the laboratories, contractors, and private industrial companies. He said that specifications exist today only for irradiation limits, safety, and materials.

Private utilities or companies building nuclear plants will have troubles with building codes which the Government-owned plants have not had to face, he pointed out. He revealed some of the difficulties that even the Government has not escaped.

"All building codes," he said, "require that all sink drains be vented to the atmosphere. Sinks to handle radioactive materials either are not vented or are vented to a special vapor line connected to radioactive waste tanks and equipped with special filters."

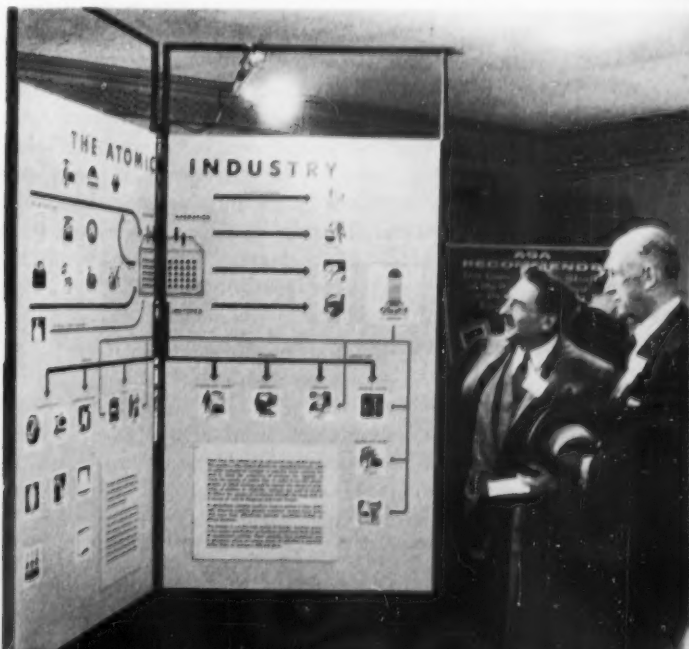
"Where plumbers have insisted on installing vents, the vents have been removed and the plumbing corrected after completion of construction and before use."

Dr Charles Crompton, National Lead Company, Cincinnati, Ohio, pointed to the fact that some 1500 industrial groups are routinely applying radioactive isotopes to their research, process control, and production problems. These isotopes are in themselves tools of measurement, and as such must be standardized for best use, he declared.

Dr Crompton was deputy director of the Atomic Energy Commission's isotopes division, administering

Dr Charles Crompton, National Lead Company, showed slides to illustrate how industry is now applying radioactive isotopes in research, and production (far left). Panel on atomic energy (center)—Dr Crompton, answering question; Dr Stuart McLain; Morehead Patterson; Harvey Wagner. Vice Admiral W. A. Kitts, 3rd, USN (Ret) presided. (picture p. 376.)

Below—R. E. Hess, Technical Director, American Society for Testing Materials, and Eugene Somoff, Technical Service Engineer, ASA, study the exhibit showing how the Atomic Industrial Forum carries on its program.



the nationwide isotope distribution program, before he joined the National Lead Company of Ohio as associate technical director. The company operates AEC's Feed Material Production Center for Uranium at Fernald, Ohio.

To illustrate the use of reactor-produced isotopes by industry, Dr Crompton showed slides of nondestructive testing, measurement of wear and tool life, use of radiation gages for measurement of weight, thickness, or

density, measurement of soil moisture, and use of radioactive "tracer" techniques to trace the effect of chemicals in foods and cosmetics, for example.

He urged that those persons involved in developing new process or product standards should clearly recognize the versatility and sensitivity of isotope techniques. "The impact of nuclear techniques on industrial standards will continue to be impressive," he said. "Don't minimize its amazing breadth of application."

What the Medalists Said

THE ENTRANCE OF ELECTRICITY on the industrial scene worked a decided change in the general attitude toward industrial accidents, said Charles Rufus Harte in his story of the development of standards in the USA, presented in accepting the 1956 Standards Medal.

"Up to that time," he said, "the principal cause of industrial accidents was moving parts of machinery, and the public attitude had seemed to be that if a man was stupid enough to get involved with a visible danger, that was just too bad."

"But the motionless, silent electric conductors in which lurked injury or death were something quite different," he explained. "There arose a loud public outcry for protection. A vast number of laws, regulations, and recommended practices, some good, some most seriously restrictive, and many contradictory, created such confusion that, in an effort to bring some sort of order out of the mess, the National Bureau of Standards called a conference of federal, state, and municipal groups, engineering, utility, and insurance associations, management, and labor to meet in Washington on January 15, 1919.

"The more than 100 delegates were unanimous in support of a series of national safety codes, but there was difference of opinion as to how and by whom they should be prepared. Dr Rosa's offer of the services of the National Bureau of Standards was rejected from fear of political influence if the Government was in control; Professor Adam's offer of the American Engineering Standards Committee procedure [now the American Standards Association] was accepted by all but the industrial group which took exception to the closed corporation character of the committee, and refused to cooperate unless industry and government representatives were included, on an equal footing with the engineer members.

"A reorganization of the Standards Committee was finally effected, and early in 1920, with Government and trade associations represented, two correlating committees were set up, one to bring order out of the safety code mess, the other to clear up the almost equally confused mining standards."

The word "committee" as part of the name of the American Engineering Standards Committee became a serious handicap, Mr Harte pointed out. Its implication was that the committee was not an independent body. This made adoption of its standards increasingly difficult, even though officials as high as chief engineers and general managers urged it. It also greatly hampered efforts to secure additional financial aid.

"These and other administrative problems made it imperative that there be another charter revision," he explained. "The problem was laid in the lap of the Rules Committee in 1925. After a number of, to speak conservatively, spirited meetings, the committee came up with what it considered a reasonable revision. This received such an unfriendly reception that after two or three more attempts, equally unsatisfactory, in desperation, at the suggestion of S. L. Nicholson, always a very present help in time of trouble, the committee was enlarged, first by the addition of those representatives who were in opposition, and then, to secure a better balance, by any one who was willing to take part. This diplomatic move, coupled with rigorous enforcement of a rule that a destructive criticism had to be accompanied by a constructive replacement, was so successful that after nearly a year of almost weekly meetings the Rules Committee was able to submit its unanimous report. The organization became the American Standards Association, headed by a president and a board of directors elected from the executives of the member-bodies and responsible for the executive, financial, and general administrative functions except that of approving standards." Mr Harte continued: "A Standards Council, consisting of the representatives of the member-bodies and, ex officio, the chairman, and the vice-chairman of the Association was responsible for the rules to regulate the development of standards, and, if the latter were properly developed, their approval. It might not, however, make standards. Liberalization of methods, including a couple of new procedures, and the elimination of some minor troubles put the new association on a particularly satisfactory basis. The later story, however, will have to be told by some future medalist."



H. C. Ramsey (left), who presented F.S. Blackall for Coonley Medal, hears ASA's President Hallowell read award citation

A REVOLUTIONARY CHANGE has taken place in this country in the attitude industrial competitors hold toward one another, said Frederick S. Blackall, Jr, in his speech accepting the Howard Coonley Medal.

"In my own industry and many others," he said, "competitors are now more often than not the best of friends, not only willing but anxious to extend each other the fullest measure of cooperation in all matters except that of getting the order, in which they still vie with each other down to the last ditch."

Mr Blackall described the change in attitudes among conflicting groups as "one of the finest by-products of the standards movement, which has spread like wildfire during the past three decades."

"I give special credit to the American Standards Association," he said, "for the revolution which has taken place in the relationship of industrial competitors. In no industrial activity that I know of do competitors have a better opportunity to discover mutual points of view than in the development of industrial standards."

The ASA, he said, was one of the first organizations to grasp the fact that even among apparently dissident groups, it is usually possible to find more areas of agreement than areas of disagreement.

Mr Blackall said that the Western Electric Company estimates that American Standards for tools and gages have saved it more than \$15,000,000 during the past 25 years, and that by purchasing American Standard thread sizes in the millions of screws it buys, it saves at least 20 percent of former costs.

"These savings," he said, "have been created, to a very great extent, without special appropriations from government, without burden to the taxpayer, but rather through the uncompensated and cooperative effort of large numbers of engineers and businesses serving the cause of standards on an individual or corporate pay-as-you-go basis, without expectation of immediate reward."



With sadness, the American Standards Association received news that Charles Rufus Harte, Standards Medalist of 1956, died November 13. Mr Harte had accepted the Standards Medal in person just three

weeks before his sudden death. Although he had complained of shortness of breath and the fact that age (he was 86) had made it necessary for him to move more slowly than in the past, he had been active up to the day before his passing.

Mr Harte's twinkling eyes, quizzical jokes, and pointed analyses of standards problems had been familiar to ASA committees, Standards Council, and staff since 1923. His sense of humor and understanding of people had helped solve many of the standards problems that had arisen during those years. This was particularly true of his service as chairman of the Rules Committee which recommended reorganization of the American Engineering Standards Committee into the present American Standards Association.

Mr Harte had been chairman of the Electrical Standards Board and its predecessor organizations from the time the electrical standards work was first organized by the American Standards Association in 1926.

As the citation for the Standards Medal he received this year says so well: "He is a pioneer proponent of cooperation among all groups concerned in the development of standards; and he sought and won that cooperation where none had existed before."



Two members of ASA's Board of Directors, and two winners of the Standards Medal, enjoy a moment of relaxation. Axel Jensen, left, and A.S. Johnson, with Dr John Gaillard, 1954 Standards Medalist, hear Charles Rufus Harte, 1956 Medal winner, tell one of the amusing stories for which he was known.



Representatives from Federal Government departments took part in the Conference and showed interest in industry's views on standards. Here, Paul K. Miller,

SOME CONFERENCE.



New members of ASA's Board of Directors were guests at the Board meeting during the National Conference on Standards, and looked in on some of the Conference sessions. Vice Admiral W.A. Kitts, 3rd, USN (Ret) chairman of the Atomic Industrial Forum's Committee on Standards, left, also presided at the atomic energy session. At right is D. Roy Shoults, General Manager, Aircraft Nuclear Propulsion Department, General Electric Company. With them is ASA's President H. Thomas Hallowell, Jr, president, Standard Pressed Steel.



R.M. Gates, president, Air Preheater Corporation, and member of ASA's Board, was chairman of the Awards Committee that nominated the Howard Coonley and Standards Medalists. Mr Gates is here shown chatting with ASA's Vice Admiral G.F. Hussey, Jr.



Deputy Director of the Standardization Division, Federal Supply Service, General Services Administration, and Dr A.T. McPherson, Associate Director, National Bureau of Standards, chat with A.C. Hutton, ASA's staff representative stationed at Washington, D.C.



Saturnino de Brito, filho, of Brazil, at right, discussed with ASA's Managing Director G.F. Hussey, Jr., meetings of the Panamerican Committee on Technical Standards held in September at Rio de Janeiro.

PERSONALITIES



At the Awards Luncheon—Mrs Frederick S. Blackall, Jr (right) with Miss Madge Davidson, Mrs R.C. Sogge, and Mrs G.F. Hussey, Jr. **Between sessions (below)** from left, J.G. Henderson, chemical session moderator; Cyril Ainsworth, Technical Director, ASA (back to camera); with Standards Engineers Society officers H.G. Arlt, vice-president, and Madhu S. Gokhale, president. **(Right)**—An informal exchange of Standards ideas among company representatives.



NEWS BRIEFS.....

• Dr John W. McBurney, for many years secretary of the Sectional Committees on Masonry, A41, and on Plastering, A42, retired recently. Dr McBurney had been a member of the staff of the National Bureau of Standards for 30 years. Before his retirement he had been serving as a consultant in the Bureau's Building Technology Division. A nationally known authority in the field of building technology, he has been a leading figure in the preparation of specifications and standards for masonry, mortar, brick, and asphalt tile.

Dr McBurney holds several patents for testing instruments and methods. What is known in Europe as the Hirschwald-McBurney Coefficient is widely used for predicting the weather durability of heavy clay products and his "McBurney Indentation Test" for asphalt tile is in international use.

Dr McBurney has been active in the work of the American Society for Testing Materials as well as in ASA. He was chairman of the ASTM committees on brick and on mortar, and this year received the ASTM Award of Merit for his contribution to the work of the Society. He is a Fellow of the American Association for the Advancement of Science, the American Institute of Chemists, and the American Ceramic Society, and has been chairman of the Washington section of the AIC.

Although Dr McBurney has retired from NBS, he continues active as consultant on masonry, masonry materials, and plastics. His first private consulting job was writing the masonry chapters of a municipal building code. His address is 1543 North Flakland Lane, Silver Spring, Maryland.

• The *United Nations Review* reports that the World Health Organization is studying the possibility of

establishing international standards for drinking water. The report states: "As to what constitutes safe drinking water, there are almost as many standards as there are tests. WHO is engaged in a world-wide study of the possibility of establishing international standards for the quality of drinking water, a proposition that formed the basis of a meeting held in Manila in April 1956. It is possible, WHO believes, to draft approvable international standards of quality and uniform methods of examining water."

• D. S. Ballantine of Brookhaven National Laboratory is chairman of a new subcommittee organized by the American Society for Testing Materials to study the effects of nuclear and high energy radiation on the properties of plastics and electrical insulation.

Prime objective of the new subcommittee is to establish, where possible, standard methods of irradiation and standard methods for determining the effects of radiation on the physical and chemical properties of plastics and electrical insulation.

The subcommittee is sponsored jointly by ASTM Committee D-20 on Plastics and D-9 on Electrical Insulating Materials. It has already established sections to work in the following areas: (a) nomenclature and definitions, (b) dosimetry, (c) correlation of various sources of radiation, (d) total dosage and dose rate effects, and (e) post irradiation effects.

Anyone interested in assisting the work of this committee is invited to write to the chairman: D. S. Ballantine, Brookhaven National Laboratory, Upton, N. Y.

• Two new standard samples of nickel oxide powder are now available from the National Bureau of Standards. Although designed pri-

marily as spectrographic standards, they also are useful as chemical standards. Analyzed and certified for nine minor and trace elements, the standards are intended for checking and calibrating spectrochemical and chemical methods employed in the analysis of nickel, particularly cathode-grade material.

The nickel oxide standards are packaged in bottles containing 25 grams and are available from the Standard Sample Clerk, National Bureau of Standards, Washington 25, D. C. The fee is \$4.00 per sample.

• "In terms of present-day industrial operations every standard is a safety standard," said Cyril Ainsworth, Technical Director of the American Standards Association, at the annual meeting of the American Society of Mechanical Engineers' Safety Division, November 23-30.

"Let's take a look at the American Standard for Steel Socket-Welding Fittings, B16.11-1946, as reaffirmed in 1952," he said.

"We find two things: First, reference is made to material specifications developed by the American Society for Testing Materials.

"These specifications were not drawn to call for a material that will be easy to cut or shape. They were drawn so as to insure appropriate strength for the service to be rendered. Second, we find reference to metal thickness and the bursting strength of the fittings. After stating that, as these fittings are to be used in connection with pipe, the wall thickness must be equal to or greater than the nominal wall thickness of pipe as established by American Standard B36.10 with which they are used, the standard goes on to discuss adequacy of fitting design as follows:

"To insure adequacy of fitting design, the actual bursting strength of fitting shall be not less than the computed bursting strength of the pipe of the designated schedule number and material."

"This requirement then goes on to tell how we should determine the relative strength of the fitting by means of a hydrostatic test conducted until either the fitting or pipe bursts. Why all this talk about wall thicknesses and bursting strength? Because those who drafted the standard were interested to see that safety was built into socket-welding fittings, and for no other reason. . . .

"Analysis of standards considered as engineering standards in terms of their contribution to safety could go on and on. . . . It is clear that one must not limit oneself to the usual safety code when seeking information on safety in design, construction, operation, maintenance or what have you."



Kenneth G. Ellsworth

Ellsworth Named Director Of ASA Public Relations

Kenneth G. Ellsworth took office December 1 as director of public relations of the American Standards Association.

Mr. Ellsworth comes to ASA from the American Thread Company, where he was manager of public relations. He also served in the public relations field with Johns-Manville Corporation and with the National Broadcasting Company.

He succeeds George P. Paine,

former public relations director and assistant secretary of the Association, who was recently appointed executive secretary of the American Association of Textile Chemists and Colorists.

Mr. Ellsworth attended Upsala College, East Orange, New Jersey; New York University; and Columbia University.

He served in World War II as a captain in the Signal Corps, United States Army.

He received a Freedom Foundation Honor Medal in 1951, presented for the Foundation by then General Dwight D. Eisenhower, for "outstanding achievement in the bringing about of a better understanding of the American way of life."

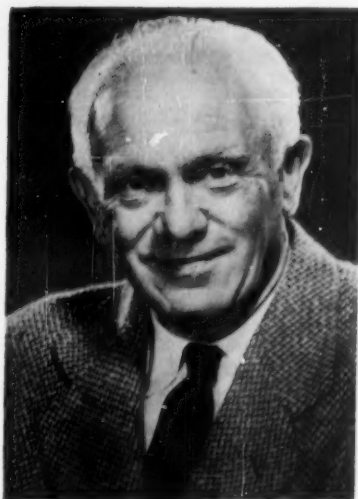
He is a member of the Public Relations Society of America.

Service Recognized

John I. Crabtree, assistant head of the Applied Photography Division, of Eastman Kodak Research Laboratories, Rochester, was awarded a scroll by a group of individuals in the photographic field at a dinner in his honor December 3.

About fifty persons from all branches of the photographic industry attended the dinner.

Citing him for outstanding achievements in the development of American Standards in the photo-



John I. Crabtree

graphic field, the scroll called attention to his work as chairman of the Committee on Photographic Processing of the American Standards Association.

Mr. Crabtree will retire from Eastman Kodak Company at the end of this year, completing 43 years of service with the company.

He has received numerous medals and awards from photographic societies in France, Great Britain and the United States. These include: Progress Medal of the French Photographic Society, 1924; Henderson Award of the Royal Photographic Society, 1944; Journal Award of the Society of Motion Picture and Television Engineers, 1944; and the Journal Award of the Photographic Society of America, 1949.

Mr. Crabtree is author of many technical articles which have appeared in photographic, motion picture and scientific journals. He is co-author of the book, *Photographic Chemicals and Solutions*, published in 1929.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNER, SHIP, MANAGEMENT, AND CIRCULATION OF

THE MAGAZINE OF STANDARDS, published monthly at New York, N. Y., for Oct. 1, 1956.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher: American Standards Association, Incorporated, 70 East 45th Street, New York 17, N. Y.; Editor: Ruth E. Mason; Managing editor: None; Business manager: None.

2. The owner is: American Standards Association, Incorporated, 70 East 45th Street, New York 17, N. Y.; H. Thomas Hollowell, Jr. (President, Standard Pressed Steel Company, Jenkintown, Pa.), President; Van H. Leichter (Vice-President-Operations, American Steel & Wire Division, United States Steel Corporation, Cleveland, Ohio), Vice-President; Vice Admiral G. F. Hussey, Jr. (USN, Ret), Managing Director and Secretary.

3. The known bondholders, mortgages, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

Ruth E. Mason,

Editor

Sworn to and subscribed before me this 24th day of September, 1956.

Lydia J. Gustafsson

Notary Public, State of New York

Qualified in Westchester County

No. 60-1608150 3-29-55

Cert. filed with New York Co. Clerk

(My commission expires March 30, 1957.)

AMERICAN STANDARDS UNDER WAY

Status as of December 3, 1956

AUTOMOTIVE

In Standards Board

Inspection Requirements for Motor Vehicles, D7.1- (Revision of D7.1-1941)
Sponsors: American Association of Motor Vehicle Administrators; Association of Casualty & Surety Cos.

BUILDING AND CONSTRUCTION

American Standards Published

Combustible Properties of Treated Wood by the Fire Tube Apparatus, Method of Test for, ASTM E 69-50; ASA A2.3-1956 \$0.30

Apparatus, sampling and test specimens, procedure and report for fire tests for combustible properties of wood treated to reduce flammability. The test relates to properties of treated wood, as such, rather than to the performance of a fabrication used as an element of construction.

Sponsors: American Society for Testing Materials; National Bureau of Standards; National Fire Protection Association

Combustible Properties of Treated Wood by the Crib Test, Method of Test for, ASTM E 160-50; ASA A2.4-1956 \$0.30

Apparatus, sampling and test specimens, procedure and report for fire tests for combustible properties of wood treated to reduce flammability. The test relates to properties of treated wood as such, rather than to the performance of a fabrication used as an element of construction.

American Standards Approved

Concrete Masonry Units, Method of Sampling and Testing, ASTM C 140-56; ASA A84.1-1956 (Revision of ASTM C 140-55; ASA A84.1-1956)

Sponsor: American Society for Testing Materials

Procedures, calculation and report for the sampling and testing of concrete masonry units for compressive strength, absorption, weight and moisture content.

Asphalt-Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D 226-56; ASA A109.2-1956 (Revision of ASTM D 226-47; ASA A109.2-1955)

Character of felt and saturant, and physical properties of 15-pound and 30-pound, 36-inch or 32-inch wide asphalt-saturated roofing felt for use in the membrane system of waterproofing and in the construction of built-up roofs.

Coal-Tar Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D 227-56; ASA A109.3-1956 (Revision of ASTM D 227-47; ASA A109.3-1955)

Character of felt and saturant, and physical properties of 36-inch or 32-inch wide coal-tar saturated roofing felt for use in the membrane system of waterproofing and in the construction of built-up roofs.

Asphalt-Saturated Asbestos Felts for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D 250-56; ASA A109.4-1956 (Revision of ASTM D 250-47; ASA A109.4-1955)

Sponsor: American Society for Testing Materials

Character of felt and saturant, and physical properties of 15-pound and 30-pound, 36-inch or 32-inch wide asphalt-saturated asbestos felt for use in the membrane system of waterproofing and in the construction of built-up roofs.

Pyrometric Cone Equivalent (PCE) of Refractory Materials, Method of Test for, ASTM C 24-56; ASA A111.4-1956 (Revision of ASTM C 24-46; ASA A111.4-1955)

Sponsor: American Society for Testing Materials

Procedures for preparation of sample and test cones, mounting, heating for determining the pyrometric cone equivalent (PCE) of fire clay, fireclay brick, and silica fire clay by comparison of test cones with Standard Pyrometric Cones (PCE).

Fireclay Refractories, Classification of, ASTM C 27-56; ASA A111.5-1956 (Revision of ASTM C 27-41; ASA A111.5-1955)

Sponsor: American Society for Testing Materials

This classification pertains to machine-made fireclay refractory brick, and its purpose is to set forth the various classes and types of these materials in accordance with their normal and characteristic properties which are important in their use.

In Standards Board

Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1- (Revision of A62.1-1945)

Sponsors: American Institute of Architects; Associated General Contractors of America; National Association of Home Builders, Producers' Council

Gypsum and Gypsum Products, Methods of Testing (Revision of ASTM C 26-54; ASA A70.1-1956)

Sponsor: American Society for Testing Materials

Open Web Steel Joist Construction, Specifications for, A87.1 (Revision of A87.1-1955)

Sponsors: Steel Joist Institute

Standard Submitted

Reinforced Concrete, Building Code Requirements, ACI 318-56; ASA A89.1- (Revision of ACI 318-51; ASA A89.1-1951)

Sponsors: American Concrete Institute

Reaffirmation Being Considered

Basis for the Coordination of Masonry, ASA A62.2-1945

Sponsors: The Producers' Council; the American Institute of Architects; National Association of Home Builders

CONSUMER GOODS

In Board of Review

Soda Ash, Specifications for (Revision of ASTM D 458-39; ASA K60.11-1948)

Trisodium Phosphate, Specifications for (Revision of ASTM D 538-44; ASA K60.12-1948)

Sodium Metasilicate, Specifications for (Revision of ASTM D 537-41; ASA K60.18-1948)

Methods of Sampling and Chemical Analysis of Alkaline Detergents, (Revision of ASTM D 501-54; ASA K60.21-1954)

Sponsor: American Society for Testing Materials

DRAWINGS AND SYMBOLS

Reaffirmation Being Considered

Graphical Symbols for Heat-Power Apparatus, ASA Z32.2.6-1950

Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

ELECTRIC AND ELECTRONIC

American Standard Published

40-Watt T-12 Pre-heat Start Fluorescent Lamp, Dimensional and Electrical Characteristics, ASA C78.408-1956 (Revision of ASA C78.408-1951) \$0.25

American Standard Approved

Measurement of Pulse Quantities, Methods of, 55 IRE 15.51; ASA C16-28-1956

Sponsor: Institute of Radio Engineers

In Board of Review

Color Coding for Numerical Values of Components for Electronic Equipment, RETMA GEN-101-A; ASA C83.1- (Revision of RETMA GEN-101; ASA C83.1-1949)

Sponsor: Radio-Electronics-Television Manufacturers Association

Nomenclature and Dimensions for Panel Mounting Racks, Panels, and Associated Equipment, RETMA SE-102; ASA C83.9-

Rectangular Waveguides, Requirements for, RETMA TR-108-A; ASA C83.10-Metal-Encased Fixed Paper Dielectric Capacitors for D-C Application, Requirements for, RETMA TR-113-A; ASA C83.11-

Cable Connectors for Audio Facilities for Radio Broadcasting, Requirements for, RETMA TR-118; ASA C83.12-

Wire-Wound Power-Type Rheostats, Requirements for, RETMA TR-133; ASA C83.13-

Rigid Coaxial Transmission Lines—50 Ohms, Requirements for, RETMA TR-134; ASA C83.14-

Electrolytic Capacitors (For Use Primarily in Transmitters and Electronic Instruments) Requirements for, RETMA TR-140; ASA C83.15-
Sponsor: Radio-Electronics-Television Manufacturers Association

In Standards Board

Measurement of Gain, Amplification, Loss, Attenuation and Amplitude-Frequency-Response, Methods of, 56 IRE 3.S1; ASA C16.29

Sponsor: Institute of Radio Engineers
Safety for Rubber-Covered Wires and Cables, UL April 1956; ASA C33.6
Sponsor: Underwriters' Laboratories

Lightning Arresters for A-C Power Circuits, C62.1- (Revision of C62.1-1944)
Sponsor: American Institute of Electrical Engineers

Standard Submitted

Characteristics of Pickups for Shock and Vibration Measurement, Method for Specifying, Z24.21
Sponsor: Acoustical Society of America

GAS-BURNING APPLIANCES

American Standards Published

Domestic Gas Clothes Dryers, Approval Requirements for, Z21.5-1956 (Revision of Z21.5-1953, and Addenda Z21.5a-1954) \$2.00

Central Heating Gas Appliances, Volume IV, Gravity and Fan Type Vented Recessed Heaters, Approval Requirements for, Z21.13.4a-1956 \$0.25

Metal Connectors for Gas Appliances, Listing Requirements for, Z21.24a-1956, (Addenda to Z21.24-1955) \$0.10

Hotel and Restaurant Deep Fat Fryers, Approval Requirements for, Z21.27a-1956 (Addenda to ASA Z21.27) \$0.40

Gas-Fired Duct Furnaces, Approval Requirements for, Z21.34a-1956 (Addenda to Z21.34-1955) \$0.25

Sponsor: American Gas Association

MATERIALS AND TESTING

American Standard Published

Structural Silicon Steel, Specification for, ASTM A 94-54; ASA G41.1-1956 \$0.30

American Standard Approved

Thermometers, Specifications for, ASTM E 1-56; ASA Z71.1-1956 (Revision of ASTM E 1-55; ASA Z71.1-1956)
Sponsor: American Society for Testing Materials

MECHANICAL

American Standards Published

Gage Blanks, CS 8-51, with 1955 Supplement; ASA B47.1-1956 (Revision of ASA B47.1-1941) \$0.45
Developed by: American Gage Design Committee

Lightweight and Thin-Sectioned Gray Iron Castings, Specifications for, ASTM A 190-47; ASA G27.1-1956 (Revision of ASTM A 190-40; ASA G27.1-1942) \$0.30

Requirements covering lightweight and thin-sectioned gray iron castings in which appearance, machinability and dimension tolerances are primary considerations.

Boiler Rivet Steel and Rivets, Specifications for, ASTM A 31-55; ASA G28.1-1956 \$0.30

Requirements covering two grades of rivet steel and rivets to be used in boilers and other pressure vessels.

Mild-to-Medium-Strength Carbon-Steel Castings for General Application, Specifications for, ASTM A 27-55; AASHO M103; ASA G50.1-1956 \$0.30

Requirements covering mild-strength to medium-strength carbon-steel castings for general application as distinguished from carbon-steel and alloy-steel castings requiring a tensile strength in excess of 70,000 psi.

High-Strength Steel Castings for Structural Purposes, Specification for, ASTM A 148-55; ASA G52.1-1956 \$0.30

Sponsor: American Society for Testing Materials

In Board of Review

Conveyor Terms and Definitions, B75.1
Sponsor: Conveyor Equipment Manufacturers Association

Gray Iron Castings, Specifications for, ASTM A 48-56; ASA G25.1 (Revision of ASTM A48-48; ASA G25.1-1948)

Sponsor: American Society for Testing Materials

Withdrawal Being Considered

Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous Industrial Uses, ASTM A 215-44; ASA G51.1-1944

Sponsor: American Society for Testing Materials

METALLIC COATINGS

American Standards Published

Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars, and Strip, Specifications for, ASTM A 123-53; AASHO M111; ASA G8.1-1956 \$0.30

Requirements covering the protective zinc coatings, applied on products fabricated from rolled, pressed and forged steel shapes, plates, bars, and strip, $\frac{1}{8}$ in. thick and heavier by dipping the articles in a molten bath of zinc.

Zinc-Coated (Galvanized) Iron or Steel Sheets, Coils, and Cut Lengths, Specifications for, ASTM A 93-55T; ASA G8.2-1956 \$0.30

Requirements covering sheets in coils and cut lengths, zinc coated (galvanized) by the hot-dip process. Galvanized sheets are produced with eight classes of zinc coatings, applied by the hot-dip process. These classes are designed so that the consumer may obtain sheets with coating consistent with the service life expected and consistent with the forming hazards involved.

Electrodeposited Coatings of Cadmium on Steel, Specifications for, ASTM A 165-55; ASA G53.2-1956 \$0.30

Sponsor: American Society for Testing Materials

Requirements for electroplated cadmium coatings on steel articles that are required to withstand corrosion. Types NS, OS and TS are covered.

Electrodeposited Coatings of Nickel and Chromium on Steel, Specifications for, ASTM A 166-55T; ASA G53.3-1956 \$0.30

Requirements for electroplated coatings on steel articles including a final coating of nickel or chromium where both appearance and protection against corrosion of the basis metal are important. Types DS, FS, KS, and QS are covered.

Electrodeposited Coatings of Nickel and Chromium on Copper and Copper-Base Alloys, Specifications for, ASTM B 141-55; ASA G53.4-1956 \$0.30

Requirements for electroplated coatings on copper articles including a final coating of nickel or chromium where both appearance and protection against corrosion of the basis metal are important. Types FC, KC and QC are covered.

Electrodeposited Coatings of Nickel and Chromium on Zinc and Zinc-Base Alloys, Specifications for, ASTM B 142-55; ASA G53.5-1956 \$0.30

Requirements for electroplated coatings on zinc articles including a final coating of nickel or chromium where both appearance and protection against corrosion of the basis metal are important. Types FZ, KZ and QZ of coating are covered.

Preparation of Low-Carbon Steel for Electroplating, Recommended Practice for, ASTM B 183-49; ASA G53.7-1956 \$0.30

Description of cleaning cycle, including nature of cleaning, cleaning solutions and apparatus, procedures for racked parts and for parts in bulk, and tests for efficiency, preparatory to electroplating of low-carbon steel containing less than 0.35 percent of carbon. Also indicates some of the precautions which must be taken to maintain this cycle in good operating condition.

Electrodeposited Coatings of Lead on Steel, Specifications for, ASTM B 200-55T; ASA G53.8-1956 \$0.30

Requirements for electroplated lead coatings on steel articles that are required to withstand corrosion. Types ES, MS, PS, EES, MMS and PPS of coating are covered.

Chromate Finishes on Electrodeposited Zinc, Hot-Dipped Galvanized, and Zinc Die-Cast Surfaces, Specifications for, ASTM B 201-55T; ASA G53.9-1956 \$0.30

Requirements for such supplemental finishes on electrodeposited zinc, hot-dipped galvanized, and zinc die-cast surfaces as are produced by chemical or electrochemical methods from solutions containing chromates or chromic acid. Covers only the protective value of the supplemental films and not the other properties or their composition or method of application.

Sponsor: American Society for Testing Materials

NUCLEAR ENERGY

In Standards Board

Glossary of Terms in Nuclear Science and Technology, N1
Submitted by: National Research Council

OFFICE EQUIPMENT

American Standards Approved

Ring, Memo, and Post Binder Sheet Sizes and Ring and Post Data, Specification for, X2.4.3-1956

Sponsor: National Office Management Association

PAINTS AND VARNISHES

American Standards Published

Chemical Analysis of White Pigments, Methods of, ASTM D 34-51T; ASA K15.1-1956 \$0.30

Reagents, procedure and calculation for the chemical analysis of white pigments.

Titanium Dioxide Pigments, Specifications for, ASTM D 476-48; ASA K45.1-1956 \$0.30

Requirements covering Titanium Dioxide, unextended; Titanium-Barium Pigment; and Titanium-Calcium Pigment.

Sponsor: American Society for Testing Materials

PETROLEUM PRODUCTS AND LUBRICANTS

In Standards Board

Viscosity by Means of the Saybolt Viscometer, Test for, ASTM D88-56; ASA Z11.2 (Revision of ASTM D 88-53; ASA Z11.2-1953)

Flash and Fire Points by Means of Cleveland Open Cup, Test for, ASTM D 92-56; ASA Z11.6 (Revision of ASTM D 92-52; ASA Z11.6-1952)

Water in Petroleum Products and Other Bituminous Materials, Test for, ASTM D 95-56T; ASA Z11.9 (Revision of ASTM D 95-46; ASA Z11.9-1947)

Distillation of Gasoline, Naphtha, Kerosene, and Similar Petroleum Products, Test for, ASTM D 86-56; ASA Z11.10 (Revision of ASTM D 86-54; ASA Z11.10-1955)

Saponification Number of Petroleum Products by Color-Indicator Titration, Method of Test for, ASTM D 94-56T; ASA Z11.20 (Revision of ASTM D 94-55; ASA Z11.20-1955)

Copper Corrosion by Petroleum Products, Test for, ASTM D 130-56; ASA Z11.21 (Revision of ASTM D 130-30; ASA Z11.21-1930)

Flashpoint by Tag Closed Tester, Test for, ASTM D 56-56; ASA Z11.24 (Revision of ASTM D 56-52; ASA Z11.24-1952)

Knock Characteristics of Motor Fuels by the Motor Method, Test for, ASTM D 357-56; ASA Z11.37 (Revision of ASTM D 357-53; ASA Z11.37-1953)

Vapor Pressure of Petroleum Products (Reid Method), Test for, ASTM D323-56; ASA Z11.44 (Revision of ASTM D 323-55; ASA Z11.44-1955)

Tetraethyllead in Gasoline, Test for, ASTM D 526-56; ASA Z11.48

Oil Content of Petroleum Waxes, Method of Test for, ASTM D 721-56T; ASA Z11.52 (Revision of ASTM D721-55; ASA Z11.52-1955)

Knock Characteristics of Motor Fuels by the Research Method, Test for, ASTM D 908-56; ASA Z11.69 (Revision of ASTM D908-55; ASA Z11.69-1955)

Olefinic Plus Aromatic Hydrocarbons in Petroleum Distillates, Method of Test for, ASTM D 1019-56T; ASA Z11.71 (Revision of ASTM D 1019-55T; ASA Z11.71-1955)

ASTM-IP Petroleum Measurement Tables, ASTM D 1250-56; ASA Z11.83 (Revision of ASTM D 1250-55; ASA Z11.83-1955)

Evaporation Loss of Lubricating Greases and Oils, Test for, ASTM D 972-56; ASA Z11.93

Sponsor: American Society for Testing Materials

PHOTOGRAPHY

In Standards Board

Amateur Roll Film, Backing Paper, and Film Spools, Dimensions for, PH1.21- (Revision of Z38.1.7-1950)

Photographic Dry Plates (Inch and Centimeter sizes), Dimensions for, PH1.23- (Revision of Z38.1.30-1951 and Z38.1.31-1944)

Film Packs, Dimensions for, PH1.26- (Revision of Z38.1.1-1951)

Spooling Photographic Paper for Recording Instruments, Requirements for, PH1.27-

Sponsor: Photographic Standards Board
Evaluating Films for Monitoring X-rays and Gamma Rays Having Energies up to 2 Million Electron Volts, Method for PH2.10

Sponsor: Photographic Standards Board
Melting Point of a Nonsupport Layer of Films, Plates, and Papers in Distilled Water, Method for Determining, PH4.11- (Revision of Z38.8.20-1948)

Photographic Grade Mono-Methyl-Para-Aminophenol Sulphate, Specifications for, PH4.125- (Revision of Z38.8.125-1948)

2,4-Diaminophenol Hydrochloride, Specifications for, PH4.127- (Revision of Z38.8.127-1948)

Para-Hydroxyphenylglycine, Specifications for, PH4.128- (Revision of Z38.8.128-1949)

Para-Aminophenol Hydrochloride, Specifications for, PH4.129- (Revision of Z38.8.129-1948)

Pyrogallol Acid, Specifications for, PH4.130- (Revision of Z38.8.130-1948)

Para-Phenylenediamine, Specifications for, PH4.132- (Revision of Z38.8.132-1948)

Para-Phenylenediamine Dihydrochloride, Specifications for, PH4.133- (Revision of Z38.8.133-1948)

Chlorohydroquinone, Specifications for, PH4.134- (Revision of Z38.8.134-1948)

Sodium Thiocyanate, Specifications for, PH4.177-

Potassium Chloride, Specifications for, PH4.202- (Revision of Z38.8.202-1948)

Sodium Chloride, Specifications for, PH4.203- (Revision of Z38.8.203-1948)

5-Methylbenzotriazole, Specifications for, PH4.205- (Revision of Z38.8.205-1948)

6-Nitrobenzimidazole Nitrate, Specifications for, PH4.206- (Revision of Z38.8.206-1948)

Sodium Hydroxide, Specifications for, PH4.225- (Revision of Z38.8.225-1948)

Potassium Hydroxide, Specifications for, PH4.226- (Revision of Z38.8.226-1948)

Potassium Carbonate, Specifications for, PH4.229- (Revision of Z38.8.229-1948)

Ammonium Hydroxide, Specifications for, PH4.232- (Revision of Z38.8.232-1948)

Sponsor: Photographic Standards Board

Standards Submitted

32mm Motion-Picture Film, 2R-3000, Dimensions for, PH22.71 (Revision of Z22.71-1950)

32mm Motion-Picture Film, 4R-3000, Dimensions for, PH22.72 (Revision of Z22.72-1950)

35mm Anamorphic Prints with Magnetic Sound Records, Usage in Projector, PH22.103

Projector Aperture for 35mm, Anamorphic, 2.55:1 Prints with Squeeze Ratio of 2:1, PH22.104

Sponsor: Photographic Standards Board

Reaffirmation Requested

16mm Sound Projector Test Film PH22.79, (Reaffirmation of Z22.79-1950)

Sponsor: Photographic Standards Board

PIPE AND FITTINGS

American Standards Published

Welded and Seamless Steel Pipe, Specifications for, ASTM A 53-55T; ASA B36.1-1956 (Revision of ASTM A 53-47; ASA B36.1-1950) \$0.30

Seamless Carbon-Steel Pipe for High-Temperature Service, Specifications for, ASTM A 106-55T; ASA B36.3-1956 \$0.30

Electric-Fusion (Arc)-Welded Steel Plate Pipe, Sizes 16 in. and over, Specifications for, ASTM A 134-54; ASA B36.4-1956 \$0.30

Electric-Resistance-Welded Steel Pipe, Specifications for, ASTM A 135-55T; ASA B36.5-1956 \$0.30

Electric-Fusion (Arc)-Welded Steel Pipe, Sizes 4 in. and over, ASTM A 139-55; ASA B36.9-1956 \$0.30

Medium-Carbon Seamless Steel Boiler and Superheater Tubes, Specifications for, B36.15-1956 \$0.30

Welded and Seamless Open-Hearth Iron Pipe, Specifications for, ASTM A 253-55T; ASA B36.23-1956 \$0.30

Seamless Low-Carbon and Carbon-Molybdenum Steel Still Tubes for Refinery Service, Specifications for, ASTM A 161-55T; ASA B36.27-1956 \$0.30

These specifications cover seamless, hot-rolled and cold-drawn, low-carbon and carbon-molybdenum steel still tubes, 2 in. and over, in outside diameter, and thicker than 0.220 in. in minimum wall for use in carrying oil at elevated temperatures and pressures. Lists chemical requirements and tensile properties and describes various tests.

Seamless Intermediate Alloy-Steel Still Tubes for Refinery Service, Specifications for, ASTM A200-55T; ASA B36.30-1956 \$0.30

These specifications cover several grades of chromium-molybdenum and chromium-molybdenum-silicon seamless, hot-rolled and cold-drawn intermediate alloy-steel still tubes, 2 in. and over in outside diameter and thicker than 0.220 in. in minimum wall for use in carrying oil at elevated temperatures and pressures. Lists chemical requirements and tensile properties and describes various tests.

Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes, Specifications for, ASTM A 209-55T; ASA B36.31-1956 \$0.30

These specifications cover three grades of seamless carbon-molybdenum alloy-steel tubes. Contain a table giving diameters and wall thicknesses, list chemical requirements, describe check analysis, and various tests on which acceptance is based.

Electric-Resistance-Welded Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes, Specifications for, ASTM A 250-55T; ASA B36.34-1956 \$0.30

Seamless and Welded Austenitic Stainless Steel Sanitary Tubing, Specifications for, ASTM A 270-55; ASA B36.38-1956 \$0.30

Seamless and Welded Steel Pipe for Low-Temperature Service, Specifications for, ASTM A 333-55T; ASA B36.40-1956 \$0.30

Seamless and Welded Steel Tubes for Low-Temperature Service, Specifications for, ASTM A 334-55T; ASA B36.41-1956 \$0.30

Seamless Ferritic Alloy Steel Pipe for High-Temperature Service, Specifications for, ASTM A 335-55T; ASA B36.42-1956 \$0.30

[Combined revision of the following standards:

Seamless Alloy-Steel Pipe for High-Temperature Service (ASTM A158-49T) B36.21-1950; Seamless Carbon-Molybdenum Alloy-Steel Pipe for High-Temperature Service (ASTM A206-48T) B36.22-1950; Seamless Chromium-Molybdenum Alloy Steel Pipe for Service at High Temperature (ASTM A280-48T) B36.24-1950; Seamless 1 Percent Chromium, 0.5 Percent Molybdenum Alloy-Steel Pipe for Service at High Temperatures (ASTM A315-48T) B36.25-1950]

Sponsors: American Society of Mechanical Engineers, American Society for Testing Materials

Forged or Rolled Steel Pipe Flanges, Forged Fittings, and Valves and Parts for General Service, Specifications for, ASTM A 181-55T; ASA G46.1-1956 \$0.30

Requirements covering two grades, designated grades I and II, of forged or rolled steel pipe flanges, forged fittings, and valves and parts for general service.

Sponsor: American Society for Testing Materials

SAFETY

American Standard Published

Textile Safety Code, ASA L1.1-1956. (Revision of ASA L1.1-1947) \$0.75
Safety requirements for the textile industry with special emphasis on the guarding of machines used primarily in this industry for such operations as picking, carding, spinning, weaving, washing, dyeing, and finishing.

Sponsor: National Safety Council

American Standard Approved

Paper and Pulp Mills, Safety Code for, P1.1-1956 (Revision of P1-1936)

Sponsors: National Safety Council; American Paper and Pulp Association

In Standards Board

Protective Lightning, Practice for, A85.1 (Revision of American War Standards A85-1942)

Sponsor: Illuminating Engineering Society

Project Initiated

Safety Requirements for Aerial Tramways

Sponsors: American Society of Mechanical Engineers; Eastern Ski Area Operators Association

Project Requested

Flammable Liquids, Classification and Identification

TEXTILES

Withdrawal Being Considered

General Methods of Testing Cotton Fibers, ASTM D 414-54T; ASA 414.23-1951

Sponsor: American Society for Testing Materials; American Association of Textile Chemists and Colorists



Standards Outlook

by LEO B. MOORE

Engineering Manpower

Recognition of industry's future requirements for engineers has now made it well understood that we are not educating engineers in sufficient numbers to satisfy an increasingly engineering-oriented economy. Not so well known is the fact that this condition is close upon us and the problem must be attacked on both a short- and a long-run basis. Among other things, on the short-run basis industry might certainly turn to standardization as one phase of its program.

Clearly, the long-run handling of the problem rests in the educational institutions which must take time to prepare men for their careers. However, not only does it require time to produce new engineers of the quality needed, but the educational problem itself is primarily one of investment and development, and both of these take time.

The acquisition of funds and construction of facilities in some suitable increment to prepare for the estimated future, although a large problem in its own right, is not the greatest or the most difficult. Facilities are relatively easy to come by as compared to suitable faculties. The attraction of men to the teaching profession in the face of insistent demands for their services in profitable engineering activity, and then the maintenance of their professional interest and abilities, constitute problems of major magnitude for education.

Until the numbers of engineers pouring out of increased educational capacity are sufficient to provide wider selection of engineering talent, the main effort to counteract this manpower problem must rest with the using functions, whether industrial or not. In industry the main answer will lie in the more effective use of engineering personnel, on the principle that we conserve resources that are in short supply. Companies that have large engineering staffs should now be deep in this problem, seeking probable ways for its solution. For example, one way might be the elimination of duplicated engineering. This approach has many ramifications but is suggested here because this concept has a close relation to the field of standardization. Through standardization, we believe, men are freed from routine work to apply their energies to more pressing and challenging problems. Standardization provides engineers the opportunity to do original work because previous decisions have been recorded and accepted. Full acceptance of the work of standards groups will contribute mightily to the lessening of pressure for talent in every engineering function in the business.

Managements of industry who are concerned with the problem of engineering manpower now and in the future might be apprised of this fundamental tenet in standardization, and through this opportunity standards activity might well take on a new dimension and stature in every company.

•
Mr Moore is Assistant Professor of Industrial Management at Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

EVERYBODY'S BUSINESS—*NOBODY'S BUSINESS?*

NOT TRUE IN STANDARDIZATION—Every business today succeeds in increasing production, cutting operating costs, improving efficiency—to the extent it uses standards

Standards are everybody's business

American Standards are your business

Now available for your use—up-to-date information on what is happening on standards

STANDARDS ARE EVERYBODY'S BUSINESS

Proceedings of the Seventh National Conference on Standards

100 pp full text with pictures 8½x11 \$4.00

What it contains—

- Management's views on chemical industry standards
- Dollar savings through standards—case histories
- Where are we in screw thread standardization?
- New developments on slotted and tapping screws and metallic drive screws
- How to prevent death and destruction by fire
- The problem of steel specifications
- Why are standards everybody's business?
- After the standard—what next?
- The Howard Coonley and Standards Metals
- The urgency of standardization for atomic energy

Published by The American Standards Association
Incorporated
70 East 45 Street, New York 17, N.Y.

**STANDARDS
ARE
EVERYBODY'S
BUSINESS**

American Standards Association
70 East 45 Street, New York 17

Please send me copies of "Standards Are Everybody's Business" at \$4.00 each. Check enclosed Bill me

Name

Address

City Zone State

